

Access DB# 151280

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: Daniel S. Metzmaier Examiner #: 67295 Date: 4/19/05
Art Unit: 1712 Phone Number # 21089 Serial Number: _____
Mail Box and Bldg/Room Location: PEM 10A49 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: ESTERS WITH ANTIMICROBIAL AND ANTIFUNGAL PROPERTIES

Inventors (please provide full names): THOMAS DALY

Earliest Priority Filing Date: 6/26/02 (US APPL) 6/25/03 (PCT)

For Sequence Searches Only Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

I claim:

1. A molecule containing a bromo-nitro group having the

formula:



where R and R' are the same or different and are independently chosen from the group containing polysiloxane, linear or branched, saturated or unsaturated, alkyl, alkenyl, alkylamine, alkylamide, alkylquat, alkanol, ether, polyether, arylalkyl, carboxylic acid, ester, polyester and ketone.

2. The Molecule of claim 1 wherein the bromo-nitro group has an occurrence rate of greater than 1.

SCIENTIFIC REFERENCE BR
Sci & Tech Inf. Cntr.

APR 21 2005

Pat. & T.M. Office

See Attached (Emphasis on esters & polyesters, see claim 11.)

(TRIED TO PRINT OUT CLOSER ART TOWARDS BEGINNING.)

STAFF USE ONLY

Type of Search

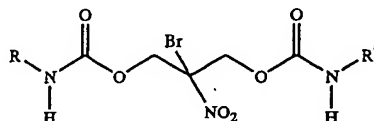
Vendors and cost where applicable

3. A metal working fluid base comprising the molecule according to claim 1.

4. A surfactant comprising a molecule according to claim 1.

5. A foaming or anti-foaming agent comprising a molecule according to claim 1.

6. A molecule comprising at least one bromo-nitro group covalently bonded, said molecule having the formula:



where R and R' are the same or different and are independently chosen from the group containing polysiloxane, linear or branched, saturated or unsaturated, alkyl, alkenyl, alkylamine, alkylamide, alkylquat, alkanol, ether, polyether, arylalkyl, carboxylic acid, ester, polyester, and ketone.

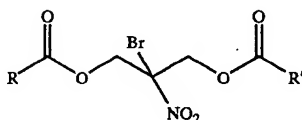
7. A metal working fluid base comprising a molecule according to claim 6.

8. A surfactant comprising a molecule according to claim 6.

9. A foaming or anti-foaming agent comprising a molecule according to claim 6.

10. The molecule of claim 6 wherein the occurrence rate of the bromine and nitro group is greater than 1.

11. An ester comprising at least one bromo-nitro group of the formula:



where R and R' are the same or different and are independently chosen from the group containing polysiloxane, linear or branched, saturated or unsaturated, alkyl, alkenyl, alkylamine, alkylamide, alkylquat, alkanol, ether, polyether, arylalkyl, carboxylic acid, ester, polyester, and ketone.

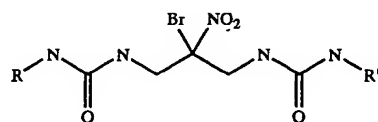
12. A metal working fluid base comprising a molecule according to claim 11.

13. A surfactant comprising a molecule according to claim 11.

14. A foaming or anti-foaming agent comprising a molecule according to claim 11.

15. The molecule of claim 11 wherein the occurrence rate of the bromine and nitro group is greater than 1.

16. A molecule comprising at least one bromo-nitro group covalently bonded of the formula:



where R and R' are the same or different and are independently chosen from the group containing polysiloxane, lin-

ear or branched, saturated or unsaturated, alkyl, alkenyl, alkylamine, alkylamide, alkylquat, alkanol, ether, polyether, arylalkyl, carboxylic acid, ester, polyester, and ketone.

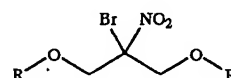
17. A metal working fluid comprising a molecule according to claim 16.

18. A surfactant comprising a molecule according to claim 16.

19. A foaming or anti-foaming agent comprising a molecule according to claim 16.

20. The Molecule of claim 16 wherein the bromo-nitro group has an occurrence rate of greater than 1.

21. A molecule comprising at least one bromo-nitro group covalently bonded of the formula:



where R and R' are the same or different and are independently chosen from the group containing polysiloxane, linear or branched, saturated or unsaturated, alkyl, alkenyl, alkylamine, alkylamide, alkylquat, alkanol, ether, polyether, arylalkyl, carboxylic acid, ester, polyester, and ketone.

22. The molecule of claim 21 wherein R and/or R' is $-(CH_2CH_2O)_x-(CH_2CHCH_3O)_y-$ $(CH_2CH(CH_2CH_3)_2H)$, where x, y, and z are integers from 0 to 30.

23. A metal working fluid comprising a molecule according to claim 21.

24. A surfactant comprising a molecule according to claim 21.

25. A foaming or anti-foaming agent comprising a molecule according to claim 21.

26. The Molecule of claim 21 wherein the bromo-nitro group has an occurrence rate of greater than 1.

27. A molecule comprising at least one bromine atom and at least one nitro group covalently bonded to the same or different carbon atoms wherein said molecule is a reaction product of an isocyanate functional molecule with an alcohol functional molecule, the alcohol functional molecule or isocyanate functional molecule containing the bromine atom and the nitro group.

28. A molecule comprising at least one bromine atom and at least one nitro group covalently bonded to the same or different carbon atoms wherein said molecule is a reaction product of an isocyanate functional molecule with an amine functional molecule, the amine functional molecule or isocyanate functional molecule containing the bromine atom and the nitro group.

29. A molecule comprising at least one bromine atom and at least one nitro group covalently bonded to the same or different carbon atoms wherein said molecule is a reaction product of an epoxide and BNPD or a bromo-nitro functional alcohol.

30. A molecule comprising at least one bromine atom and at least one nitro group covalently bonded to the same or different carbon atoms wherein said molecule is a reaction product of a carboxylic acid functional molecule with an alcohol functional molecule, said alcohol functional molecule or carboxylic acid functional molecule containing the bromine atom and the nitro group.

31. A molecule comprising at least one bromine atom and at least one nitro group covalently bonded to the same carbon atom wherein said molecule is a reaction product of an isocyanate functional molecule with an alcohol functional molecule, the alcohol functional molecule or isocyanate functional molecule containing the bromine atom and the nitro group.

32. A molecule comprising at least one bromine atom and at least one nitro group covalently bonded to the same carbon atom wherein said molecule is a reaction product of an isocyanate functional molecule with an amine functional molecule, the amine functional molecule or isocyanate functional molecule containing the bromine atom and the nitro group.

33. A molecule comprising at least one bromine atom and at least one nitro group covalently bonded to the same

carbon atom wherein said molecule is a reaction product of an epoxide and BNPD or a bromo-nitro functional alcohol.

34. A molecule comprising at least one bromine atom and at least one nitro group covalently bonded to the same carbon atom wherein said molecule is a reaction product of a carboxylic acid functional molecule with an alcohol functional molecule, said alcohol functional molecule or carboxylic acid functional molecule.

35. A molecule comprising the reaction product of an alcohol and a carboxylic acid, said alcohol containing at least one substituted bromine atom and at least one substituted nitro group.

* * * * *

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FILE 'REGISTRY' ENTERED AT 11:23:58 ON 28 APR 2005
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FILE 'LREGISTRY' ENTERED AT 10:45:30 ON 28 APR 2005

L1 STR
L2 STR

FILE 'REGISTRY' ENTERED AT 10:53:22 ON 28 APR 2005

L3 31 S L1
L4 657 S L1 FUL
SAV L4 MET579/A
L5 16 S L2 SSS SAM SUB=L4
L6 SCR 1313
L7 6 S L2 AND L6 SSS SAM SUB=L4

FILE 'LREGISTRY' ENTERED AT 10:57:53 ON 28 APR 2005

L8 STR L1

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L9 5 S L8 SSS SAM SUB=L4
L10 117 S L8 SSS FUL SUB=L4
SAV L10 MET579A/A
L11 29 S L4 AND PMS/CI
L12 8 S L11 AND L10

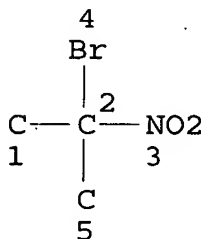
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L13 3 S L12
L14 11 S L11
L15 68 S L10
L16 1215 S L4
L17 1185969 S ANTIMICROB? OR ANTIFUNG? OR MICROB? OR FUNG? OR ANTIBAC
L18 661 S (L13 OR L14 OR L15 OR L16) AND L17
L19 61 S (L13 OR L14 OR L15) AND L17
L20 11 S L13 OR L14
L21 53 S L19 NOT L20
L22 12 S L15 NOT (L20 OR L21)
L23 364888 S ANTIMICROB? OR MICROBIOCID? OR MICROBE# OR MICROBIAL?
L24 182719 S ANTIFUNG? OR FUNGICID? OR FUNGIOCID? OR FUNGUS# OR FUNG
L25 241 S L16 AND L23
L26 265 S L16 AND L24
L27 83 S L25 AND L26

L28 66 S L27 NOT (L20 OR L21)
 L29 948609 S (MIXT# OR MIXTURE? OR BLEND? OR ADMIX? OR COMMIX? OR IM
 L30 19 S L28 AND L29
 L31 11 S L20 AND (1900-2002/PRY OR 1900-2002/PY)
 L32 52 S L21 AND (1900-2002/PRY OR 1900-2002/PY)
 L33 11 S L22 AND (1900-2002/PRY OR 1900-2002/PY)
 L34 19 S L30 AND (1900-2002/PRY OR 1900-2002/PY)

FILE 'REGISTRY' ENTERED AT 11:23:58 ON 28 APR 2005

=> d l10 que stat
 L1 STR



NODE ATTRIBUTES:

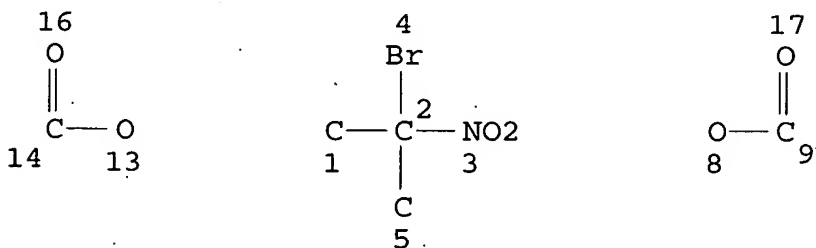
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 NSPEC IS RC AT 5
 DEFAULT MLEVEL IS ATOM
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

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 NUMBER OF NODES IS 5

STEREO ATTRIBUTES: NONE

L4 657 SEA FILE=REGISTRY SSS FUL L1
 L8 STR



NODE ATTRIBUTES:

NSPEC IS RC AT 1
 NSPEC IS RC AT 5
 DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 11

STEREO ATTRIBUTES: NONE

L10 117 SEA FILE=REGISTRY SUB=L4 SSS FUL L8

100.0% PROCESSED 132 ITERATIONS

117 ANSWERS

SEARCH TIME: 00.00.01

=> file hca

FILE 'HCA' ENTERED AT 11:24:28 ON 28 APR 2005

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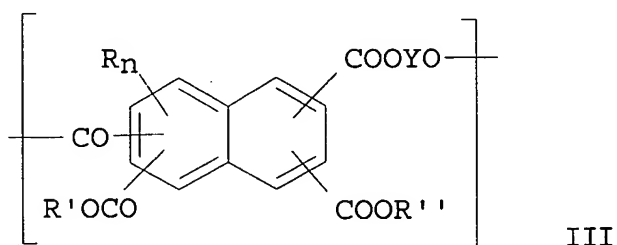
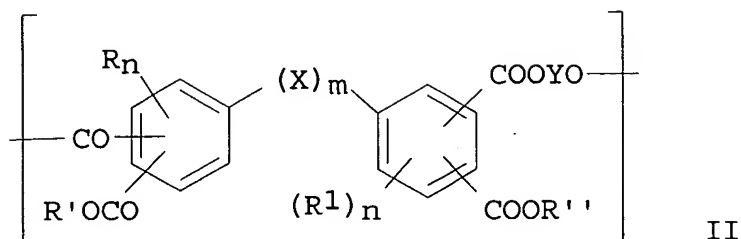
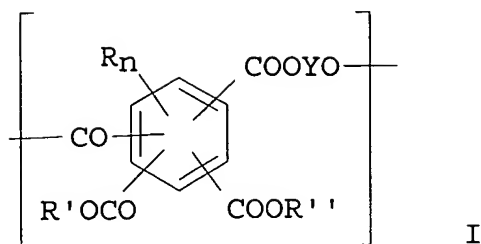
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=> d l31 1-11 cbib abs hitstr hitind

L31 ANSWER 1 OF 11 HCA COPYRIGHT 2005 ACS on STN

141:14465 Antireflective compositions for photoresists. Wu, Hengpeng;
Ding-Lee, Shuji; Xiang, Zhong; Oberlander, Joseph E.; Neisser, Mark
O.; Gonzalez, Eleazar; Shan, Jainhui (USA). U.S. Pat. Appl. Publ.
US 2004101779 A1 20040527, 12 pp. (English). CODEN: USXXCO.
APPLICATION: US 2002-301462 20021121.

GI



AB The present invention relates to a novel antireflective coating compn. comprising a polymer, a crosslinking agent and an acid generator. The present invention further relates to a process for using the novel compn., particularly at 193 nm. The polymer of the present invention contains at least one unit selected from structures I, II, III (Y = C1-10 hydrocarbyl linking group; R, R¹, R' and R'' = H, C1-10 hydrocarbyl group, halogen, -O(CO)Z, -C(CF₃)₂Z, -C(CF₃)₂(CO)OZ, -SO₂CF₃, -(CO)OZ, -SO₃Z, -COZ, -OZ, -NZ₂, -SZ, -SO₂Z, -NHCOZ, -NZCOZ or -SO₂NZ₂; Z = H or a C1-10 hydrocarbyl group; n = 1-4; X = O, CO, S, COO, CH₂O, CH₂COO, SO₂, NH, NL, OWO, OW, W; L, W = C1-10 hydrocarbyl groups; m = 0-3).

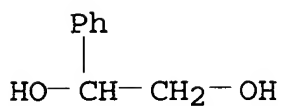
IT 694481-89-5P 694481-91-9P

(antireflective compns. for photoresists contg.)

RN 694481-89-5 HCA

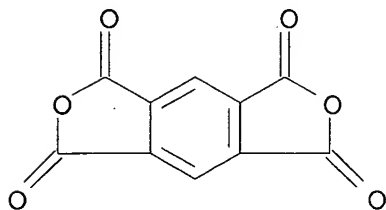
CN 1H,3H-Benzo[1,2-c:4,5-c']difuran-1,3,5,7-tetrone, polymer with 2-bromo-2-nitro-1,3-propanediol and 1-phenyl-1,2-ethanediol (9CI)
(CA INDEX NAME)

CRN 93-56-1
CMF C8 H10 O2



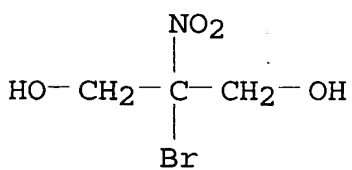
CM 2

CRN 89-32-7
CMF C10 H2 O6



CM 3

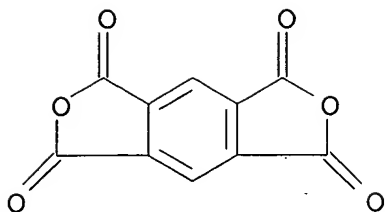
CRN 52-51-7
CMF C3 H6 Br N O4



RN 694481-91-9 HCA
CN 1H,3H-Benzo[1,2-c:4,5-c']difuran-1,3,5,7-tetrone, polymer with
2-bromo-2-nitro-1,3-propanediol (9CI) (CA INDEX NAME)

CM 1

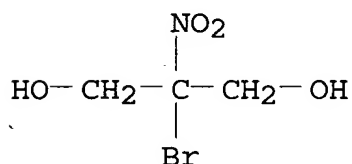
CRN 89-32-7
CMF C10 H2 O6



CM 2

CRN 52-51-7

CMF C3 H6 Br N O4



IC ICM G03C001-492

INCL 430271100; 430325000; 430905000

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 35, 38

IT 694481-89-5P 694481-91-9P 694481-93-1P

694481-95-3P 694481-97-5P

(antireflective compns. for photoresists contg.)

L31. ANSWER 2 OF 11 HCA COPYRIGHT 2005 ACS on STN

137:353522 Polymers with antibiotic, bioresistant and fungus-resistant properties. (Daly, Thomas, USA). Ger. Gebrauchsmusterschrift DE 20211854 U1 20021107, 20 pp. (German). CODEN: GGXXFR.

APPLICATION: DE 2002-20211854 20020801. PRIORITY: US 2002-PV351620 20020124; US 2002-PV361448 20020301.

AB A title polymers, useful in films and coatings, comprise .gtoreq.1 antibiotic unit (AZCBrNO2Z1A1)n [I; A, A1 = CO2, O2CNH, HNCONH, O, OH, CH2OH, Me, CO2H, etc.; Z, Z1 = (un)satd. alk(en)yl, alkylamino, NH, etc.; n >0] in the main chain. The polymers are manufd. by conversion of polyisocyanates with polyamines or polyols contg. I or polyamine or polyol prepolymers contg. I. For example, heating a mixt. of HOCH2CBrNO2CH2OH (II) and 1,2-cyclohexanedicarboxylic anhydride at 150.degree. in PhMe gave a liq. prepolymer. Adding 1.7 g of the prepolymer to 416 g neopentyl glycol at 149.degree., adding 438 g adipic acid and heating the whole for 3 h at 156.degree. and 172.degree. gave a resin contg. 896 ppm II.

IT 474607-95-9P, Adipic acid-1,2-Cyclohexanedicarboxylic anhydride-Neopentyl glycol-2-Bromo-2-nitropropane-1,3-diol copolymer (polymers with antibiotic chain segments contg. bromo and nitro groups)

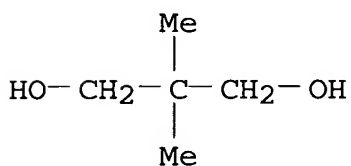
RN 474607-95-9 HCA

CN Hexanedioic acid, polymer with 2-bromo-2-nitro-1,3-propanediol, 2,2-dimethyl-1,3-propanediol and hexahydro-1,3-isobenzofurandione (9CI) (CA INDEX NAME)

CM 1

CRN 126-30-7

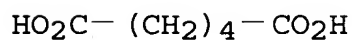
CMF C5 H12 O2



CM 2

CRN 124-04-9

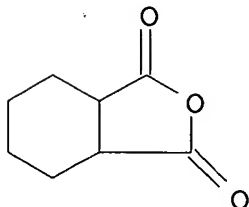
CMF C6 H10 O4



CM 3

CRN 85-42-7

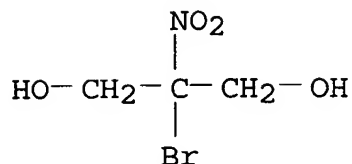
CMF C8 H10 O3



CM 4

CRN 52-51-7

CMF C3 H6 Br N O4



IC ICM C08G018-83

ICS C09D005-16

CC 35-4 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 37

IT 52-51-7DP, 2-Bromo-2-nitropropane-1,3-diol, polyester polyurethanes
 80-62-6DP, Methyl methacrylate, transesterification products with
 bromonitropropanediol, polymers 96-48-0DP, .gamma.-Butyrolactone,
 polyester polyurethanes 97-86-9DP, Isobutyl methacrylate, polymers
 with bromonitropropanediol methacrylates 104673-62-3DP, Mondur XP
 744, polyester polyurethanes 474607-95-9P, Adipic
 acid-1,2-Cyclohexanedicarboxylic anhydride-Neopentyl
 glycol-2-Bromo-2-nitropropane-1,3-diol copolymer
 (polymers with antibiotic chain segments contg. bromo and nitro
 groups)

L31 ANSWER 3 OF 11 HCA COPYRIGHT 2005 ACS on STN

135:72713 Sterilizing compositions for apparatus used in food
 industries. Min, Rim Kwon; Sohn, Son Won; Soo, Ri Sang; Shin, Jyu
 Hong (S K Corporation, S. Korea). Jpn. Kokai Tokkyo Koho JP
 2001181115 A2 20010703, 7 pp. (Japanese). CODEN: JKXXAF.
 APPLICATION: JP 2000-285111 20000920. PRIORITY: KR 1999-62124
 19991224.

AB Hexamethylene guanidine phosphate salt polymers ,
 -[(CH₂)₆NHC(:NH.cntdot.nH₃PO₄)NH]_m- polymers where m is integer of 4
 to 7 and n is integer of 1 to 14., in combination with
 2-bromo-2-nitro-1,3-propanediol (or bronopol) at the wt. ratio of
 1:1 - 20:1 are effective antimicrobial agents, controlling
 microorganisms in app. used in food industries.

IT 347360-92-3

(as antimicrobial agents for sterilization in food industries)

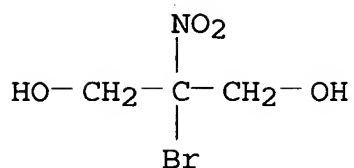
RN 347360-92-3 HCA

CN 1,3-Propanediol, 2-bromo-2-nitro-, mixt. with
 poly(iminocarbonimidoylimino-1,6-hexanediyl) phosphate (9CI) (CA
 INDEX NAME)

CM 1

CRN 52-51-7

CMF C3 H6 Br N O4



CM 2

CRN 89697-78-9

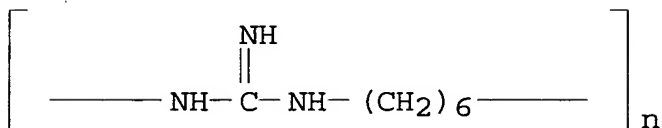
CMF (C7 H15 N3)n . x H3 O4 P

CM 3

CRN 31961-54-3

CMF (C7 H15 N3)n

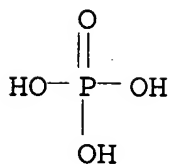
CCI PMS



CM 4

CRN 7664-38-2

CMF H3 O4 P



IC ICM A01N047-44

ICS A01N035-08; C11D003-26; C11D003-37; C11D003-48; C11D007-22;
C11D007-32; C11D007-60; C11D010-02

CC 5-2 (Agrochemical Bioregulators)

Section cross-reference(s): 38

IT 347360-92-3

(as antimicrobial agents for sterilization in food industries)

132:176983 Synergistic industrial disinfectants and antiseptics containing bromonitropropandiol and polyhexamethylene biguanide and method for sterilization and preservation. Umekawa, Osamu; Takeda, Akikatsu (Shoei Chemical Inc., Japan). Jpn. Kokai Tokkyo Koho JP 2000053511 A2 20000222, 6 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1998-239567 19980811.

AB Broad-spectrum industrial disinfectants and antiseptics for long-term use at low rates contain 2-bromo-2-nitropropane-1,3-diol (I) and one or both of poly(hexamethylenebiguanide) hydrochloride (II) and poly(hexamethylene biguanidine) acetate in synergistic proportions as active components. Thus, an aq. polyacrylamide soln. used as a paper strengthening agent was contaminated with 100,000 bacteria/mL. Addn. of II-I mixt. (8:2; sum of active components 100 mg/mL) decreased the microbial count to 0 in 14 days, whereas counts for II alone, I alone, and untreated samples were 2.1 .times. 10⁴, 1.1 .times. 10⁵, and 7.3 .times. 10⁷ after 2 wk under the same conditions (30.degree., 90% humidity).

IT 240432-09-1 259173-44-9 259173-45-0
(synergistic industrial disinfectants and antiseptics)

RN 240432-09-1 HCA

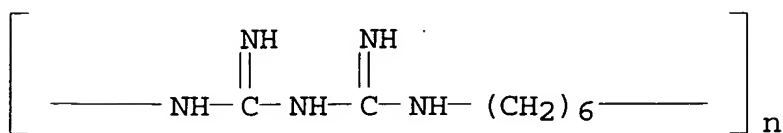
CN 1,3-Propanediol, 2-bromo-2-nitro-, mixt. with
[poly(iminocarbonimidoyliminocarbonimidoylimino-1,6-hexanediyl)]
hydrochloride (9CI) (CA INDEX NAME)

CM 1

CRN 32289-58-0

CMF (C₈ H₁₇ N₅)_n . x Cl H

CCI PMS

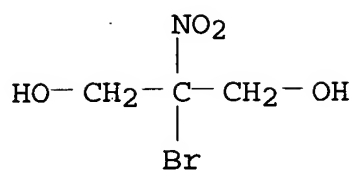


●x HCl

CM 2

CRN 52-51-7

CMF C₃ H₆ Br N O₄

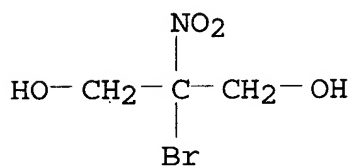


RN 259173-44-9 HCA
 CN 1,3-Propanediol, 2-bromo-2-nitro-, mixt. with
 poly(iminocarbonimidoyliminocarbonimidoylimino-1,6-hexanediyl)
 acetate (9CI) (CA INDEX NAME)

CM 1

CRN 52-51-7

CMF C3 H6 Br N O4



CM 2

CRN 28757-49-5

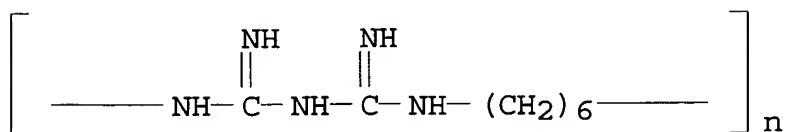
CMF (C8 H17 N5)n . x C2 H4 O2

CM 3

CRN 28757-47-3

CMF (C8 H17 N5)n

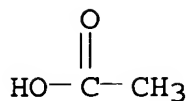
CCI PMS



CM 4

CRN 64-19-7

CMF C2 H4 O2



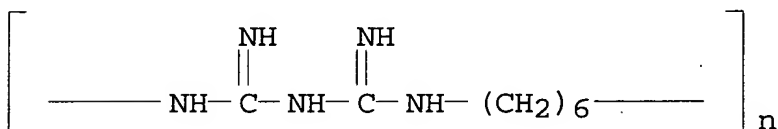
RN 259173-45-0 HCA
 CN 1,3-Propanediol, 2-bromo-2-nitro-, mixt. with
 poly(iminocarbonimidoyliminocarbonimidoylimino-1,6-hexanediyl)
 acetate and poly(iminocarbonimidoyliminocarbonimidoylimino-1,6-
 hexanediyl) hydrochloride (9CI) (CA INDEX NAME)

CM 1

CRN 32289-58-0

CMF (C8 H17 N5)n . x Cl H

CCI PMS

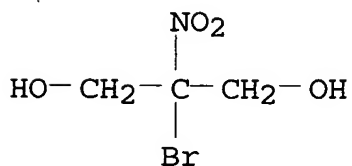


● x HCl

CM 2

CRN 52-51-7

CMF C3 H6 Br N O4



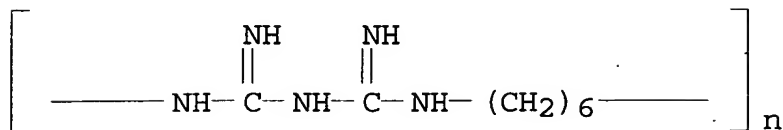
CM 3

CRN 28757-49-5

CMF (C8 H17 N5)n . x C2 H4 O2

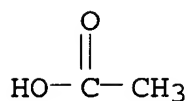
CM 4

CRN 28757-47-3
 CMF (C8 H17 N5)n
 CCI PMS



CM 5

CRN 64-19-7
 CMF C2 H4 O2



IC ICM A01N047-44
 ICS A01N047-44; A01N033-20
 CC 5-2 (Agrochemical Bioregulators)
 Section cross-reference(s): 43
 IT 240432-09-1 259173-44-9 259173-45-0
 (synergistic industrial disinfectants and antiseptics)

L31 ANSWER 5 OF 11 HCA COPYRIGHT 2005 ACS on STN

131:181108 Synergistic industrial antibacterial antiseptic compositions.
 Ohnishi, Toshiyasu; Tanaka, Ikuya (Nagase Kasei Kogyo K. K., Japan).
 Jpn. Kokai Tokkyo Koho JP 11240808 A2 19990907 Heisei, 4
 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1998-42641
 19980224.

AB The compns., useful for cooling water, aq. paints, emulsion
 adhesives, latex, etc., contain 2-bromo-2-nitropropane-1,3-diol (I)
 and poly(hexamethylenebiguanidine hydrochloride) (II) preferably at
 5:1-1:5. MICs of 1:1 mixt. of I and II against Bacillus subtilis,
 Enterobacter aerogenes, Escherichia coli, and Pseudomonas aeruginosa
 were 40, 10, 20, and 20 ppm, resp., vs. 40, 40, 40, and 40 ppm,
 resp., for I alone.

IT 240432-09-1
 (synergistic industrial antibacterial antiseptic compns. contg.
 bromonitropropanediol and poly(hexamethylenebiguanidine
 hydrochloride))

RN 240432-09-1, HCA

CN 1,3-Propanediol, 2-bromo-2-nitro-, mixt. with

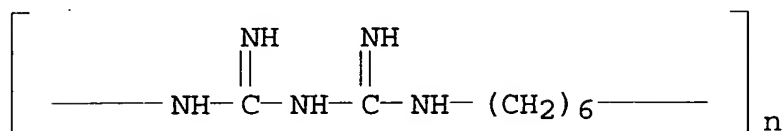
[poly(iminocarbonimidoyliminocarbonimidoylimino-1,6-hexanediyl)]
hydrochloride (9CI) (CA INDEX NAME)

CM 1

CRN 32289-58-0

CMF (C8 H17 N5)n . x Cl H

CCI PMS

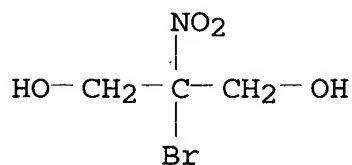


●x HCl

CM 2

CRN 52-51-7

CMF C3 H6 Br N O4



IC ICM A01N033-20

ICS A01N033-20; A01N047-44

CC 5-2 (Agrochemical Bioregulators)

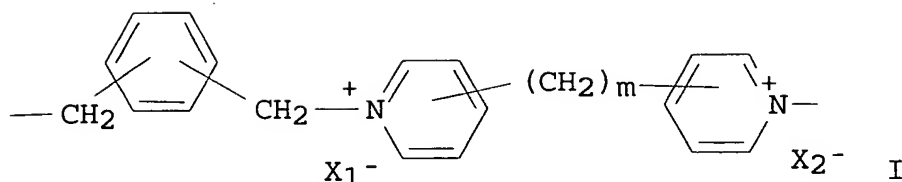
IT 240432-09-1

(synergistic industrial antibacterial antiseptic compns. contg.
bromonitropropanediol and poly(hexamethylenebiguanidine
hydrochloride))

L31 ANSWER 6 OF 11 HCA COPYRIGHT 2005 ACS on STN

130:263534 Synergistic microbicide compositions and control of
microorganisms with them. Nagase, Hiroshi; Akimoto, Satoko; Aoyagi,
Takao; Tanaka, Kazutsune; Sano, Yoshinori; Mochizuki, Kenji; Isokai,
Katsuhisa (Sagami Chemical Research Center, Japan; K. I. Kasei K.
K.). Jpn. Kokai Tokkyo Koho JP 11071208 A2 19990316
Heisei, 14 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP
1997-230559 19970827.

GI



AB The title compns. contain mixts. of (A) .gtoreq.1 ionene polymer(s) [no.-av. mol. wt. (Mn) .gtoreq.1000] having repeating units I [(X1)-, (X2)- = counter anion in quaternary salt; m = 0-6; X1 and X2 may differ in different units] with (B) .gtoreq.1 compd(s). selected from (a) aliph. bromonitro alcs. R1CBr(NO2)CHR2CHOH [R1 = H, Br, C1-2 (hydroxy)alkyl; R2 = H, Me], (b) 5-bromo-5-nitro-1,3-dioxane, (c) 4,5-trimethylene-4-isothiazolin-3-one and/or 2-methyl-4,5-trimethylene-4-isothiazolin-3-one, or their (in)org. acid salts, (d) 1,2-benzisothiazolin-3-one, (e) 5-chloro-2-methyl-4-isothiazolin-3-one-2-methyl-4-isothiazolin-3-one mixts. or their metal salt complexes, (f) 2-n-octyl-4-isothiazolin-3-one, (g) 4,5-dichloro-2-n-octyl-4-isothiazolin-3-one, (h) 2,2-dibromo-3-nitrilopropionamide, (i) methylene bis(thiocyanate), (j) glutaraldehyde, (k) o-phthalaldehyde, (l) poly(hexamethylenebiguanide) or its salts, (m) poly[oxyethylene(dimethyliminio)ethylene(dimethyliminio)ethylene dichloride], (n) tetrakis(hydroxymethyl)phosphonium sulfate (THPS), (o) dimethyldidecylammonium chloride, (p) alkyl dimethylbenzylammonium chlorides, (q) hexahydro-1,3,5-triethyl-s-triazine, (r) hexahydro-1,3,5-tri-2-hydroxyethyl-s-triazine, (s) Sodium Omadine, (t) NaClO, (u) halogenated hydantoin, and (v) Na dichloroisocyanurate. Microorganisms in water systems are controlled by simultaneous or sep. addn. of the components (A) and (B) above to the systems. Addn. of 100 ppm of a 50:50 (by wt.) mixt. of p-di(chloromethyl)benzene-4,4'-dipyridyl copolymer (Mn 7500; prepn. given) and 2-bromo-2-nitropropane-1,3-diol controlled bacteria in cooling water. Formulation examples are given.

IT 222023-78-1

(ionene polymer-contg. synergistic microbicide compns. for control of microorganisms in water systems)

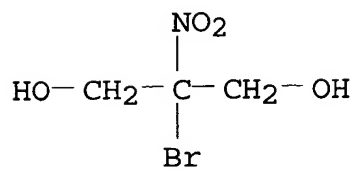
RN 222023-78-1 HCA

CN 1,3-Propanediol, 2-bromo-2-nitro-, mixt. with 4,4'-bipyridine polymer with 1,4-bis(chloromethyl)benzene (9CI) (CA INDEX NAME)

CM 1

CRN 52-51-7

CMF C3 H6 Br N O4



CM 2

CRN 31533-65-0

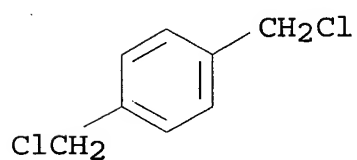
CMF (C10 H8 N2 . C8 H8 Cl2)x

CCI PMS

CM 3

CRN 623-25-6

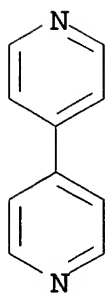
CMF C8 H8 Cl2



CM 4

CRN 553-26-4

CMF C10 H8 N2



- IC ICM A01N043-40
ICS A01N043-40; A01N033-18; A01N043-32
- CC 5-2 (Agrochemical Bioregulators)
Section cross-reference(s): 35, 43, 61
- IT 111-30-8D, Glutaraldehyde, mixts. contg. ionene polymers
461-72-3D, Hydantoin, halogenated, mixts. contg. ionene polymers
643-79-8D, o-Phthalaldehyde, mixts. contg. ionene polymers
2634-33-5D, 1,2-Benzisothiazolin-3-one, mixts. contg. ionene
polymers 2682-20-4D, 2-Methyl-4-isothiazolin-3-one, mixts. contg.
ionene polymers 2893-78-9D, Sodium dichloroisocyanurate, mixts.
contg. ionene polymers 4719-04-4D, mixts. contg. ionene polymers
6317-18-6D, Methylene bis(thiocyanate), mixts. contg. ionene
polymers 7173-51-5D, Dimethyldidecylammonium chloride, mixts.
contg. ionene polymers 7681-52-9D, Sodium hypochlorite, mixts.
contg. ionene polymers 7779-27-3D, Hexahydro-1,3,5-triethyl-s-
triazine, mixts. contg. ionene polymers 10222-01-2D,
2,2-Dibromo-3-nitrilopropionamide, mixts. contg. ionene polymers
15922-78-8D, Sodium Omadine, mixts. contg. ionene polymers
26172-55-4D, 5-Chloro-2-methyl-4-isothiazolin-3-one, mixts. contg.
ionene polymers 26530-20-1D, 2-Octyl-4-isothiazolin-3-one, mixts.
contg. ionene polymers 28757-47-3D, mixts. contg. ionene polymers
30007-47-7D, 5-Bromo-5-nitro-1,3-dioxane, mixts. contg. ionene
polymers 31512-74-0D, Poly[oxyethylene(dimethyliminio)ethylene(dimethyliminio)ethylene dichloride], mixts. contg. ionene polymers
55566-30-8D, Tetrakis(hydroxymethyl)phosphonium sulfate, mixts.
contg. ionene polymers 64359-81-5D, mixts. contg. ionene polymers
82633-78-1D, mixts. contg. ionene polymers **222023-78-1**
222023-79-2 222023-80-5 222023-81-6 222023-82-7 222023-83-8
222023-84-9 222023-85-0 222023-86-1 222023-87-2 222023-88-3
222023-89-4 222023-90-7 222023-91-8 222023-92-9 222023-93-0
222023-94-1 222023-95-2 222023-96-3 222023-97-4 222023-98-5
222023-99-6
(ionene polymer-contg. synergistic microbicide compns. for
control of microorganisms in water systems)
- L31 ANSWER 7 OF 11 HCA COPYRIGHT 2005 ACS on STN
- 125:135434 Agent and method for control of algae. II. Agent comprising
2-bromo-2-nitropropane-1,3-diol or its esters and
hydroxyethylene(dimethylimino)ethylene(dimethylimino)ethane
dichloride or its polymers. Ookuma, Masatsune; Hayashi, Seiichi;
Kaiko, Tokiko (Katayama Chemical Works Co, Japan). Jpn. Kokai
Tokkyo Koho JP 08165203 A2 **19960625** Heisei, 7 pp.
(Japanese). CODEN: JKXXAF. APPLICATION: JP 1994-310861 19941214.
- AB An agent comprising 2-bromo-2-nitropropane-1,3-diol or its lower
fatty acid esters and a compd. of the general formula
[OCH₂CH₂NMe₂CH₂CH₂NMe₂CH₂CH₂]_n+2Cl-, where n = 1-40, in a wt. ratio
ranging from 50:50 to 96:4, is extremely useful for control of
algae. Thus, 2-bromo-2-nitropropane-1,3-diol-

poly[oxyethylene(dimethylimino)ethylene(dimethylimino)ethylene dichloride] mixt. (20:5) added at .gtoreq.25 mg/L gave 100% control of algae from a cooling tower (mainly Hormidium).

IT 179824-85-2 179824-86-3 179824-87-4

(algicide for cooling towers and sports equipment)

RN 179824-85-2 HCA

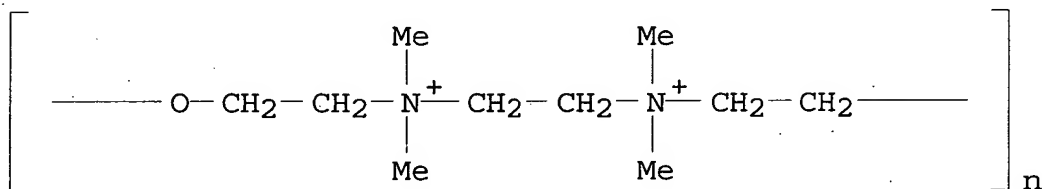
CN Poly[oxy-1,2-ethanediyl(dimethyliminio)-1,2-ethanediyl(dimethyliminio)-1,2-ethanediyl dichloride], mixt. with 2-bromo-2-nitro-1,3-propanediol (9CI) (CA INDEX NAME)

CM 1

CRN 31512-74-0

CMF (C10 H24 N2 O)n . 2 Cl

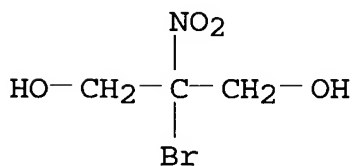
CCI PMS



CM 2

CRN 52-51-7

CMF C3 H6 Br N O4

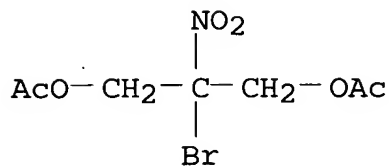


RN 179824-86-3 HCA

CN Poly[oxy-1,2-ethanediyl(dimethyliminio)-1,2-ethanediyl(dimethyliminio)-1,2-ethanediyl dichloride], mixt. with 2-bromo-2-nitro-1,3-propanediyl diacetate (9CI) (CA INDEX NAME)

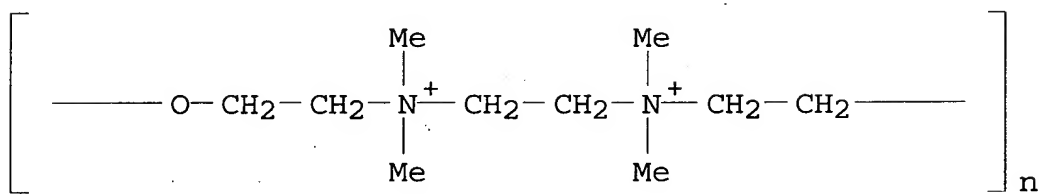
CM 1

CRN 34564-38-0
CMF C7 H10 Br N O6



CM 2

CRN 31512-74-0
CMF (C10 H24 N2 O)n . 2 Cl
CCI PMS

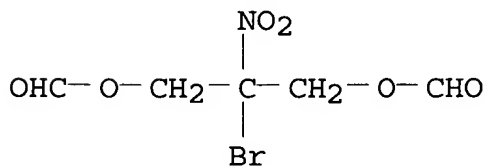


● 2 Cl⁻

RN 179824-87-4 HCA
CN Poly[oxy-1,2-ethanediyl(dimethyliminio)-1,2-ethanediyl(dimethyliminio)-1,2-ethanediyl dichloride], mixt. with 2-bromo-2-nitro-1,3-propanediyl diformate (9CI) (CA INDEX NAME)

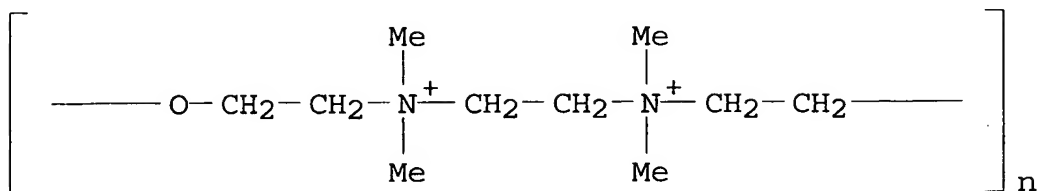
CM 1

CRN 80658-59-9
CMF C5 H6 Br N O6



CM 2

CRN 31512-74-0
 CMF (C10 H24 N2 O)n . 2 Cl
 CCI PMS



● 2 Cl⁻

IC ICM A01N033-12
 ICS A01N033-20
 CC 5-2 (Agrochemical Bioregulators)
 Section cross-reference(s): 61
 IT **179824-85-2 179824-86-3 179824-87-4**
 179824-88-5 179824-89-6
 (algicide for cooling towers and sports equipment)

L31 ANSWER 8 OF 11 HCA COPYRIGHT 2005 ACS on STN
 117:36576 Electrophotographic microcapsule toners with polyurethane shells. Arima, Hiroaki; Kitamura, Kazuo (Toray Industries, Inc., Japan): Jpn. Kokai Tokkyo Koho JP 03296770 A2 **19911227**
 Heisei, 6 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1990-101095 19900417.

AB The microcapsule toners comprise cores contg. fixing components and coloring agents and shells comprising a polyurethane formed by the reaction of polyhydric compds. having .gtoreq.1 nitro group with polyvalent isocyanates. The toners have good fixability at low pressure, mech. strength, and moisture resistance.

IT **142214-46-8**
 (microcapsule electrophotog. toners contg.)

RN 142214-46-8 HCA

CN 1,3-Propanediol, 2-bromo-2-nitro-, polymer with Coronate L (9CI)
 (CA INDEX NAME)

CM 1

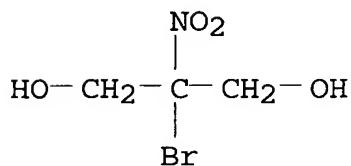
CRN 39278-79-0
 CMF Unspecified
 CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

CRN 52-51-7

CMF C3 H6 Br N O4



IC ICM G03G009-08

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

IT 142203-31-4 **142214-46-8**

(microcapsule electrophotog. toners contg.)

L31 ANSWER 9 OF 11 HCA COPYRIGHT 2005 ACS on STN

114:209205 Antibacterial and deodorant finishing of textiles and paper. Watanabe, Michio; Hashimoto, Teruko (Permchem Asia, Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 02307977 A2 **19901221** Heisei, 5 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1989-121591 19890517.

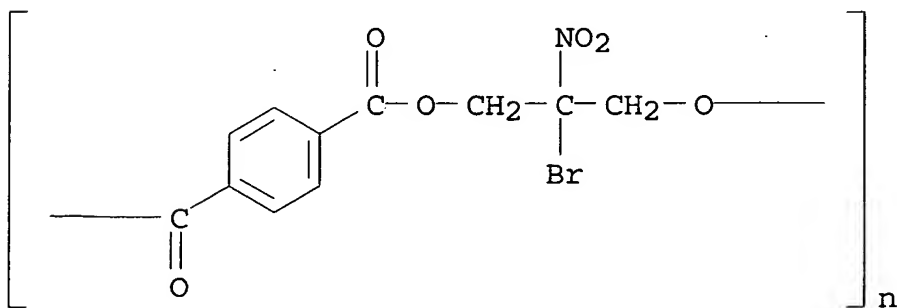
AB The title process comprises treating textiles and papers with a polyester of 2-bromo-2-nitro-1,3-propanediol (I) and terephthaloyl chloride (II). Thus, 40 g I and 30 g II were polymd. in dioxane contg. pyridine to give 45.5 g polyester. A cotton fabric treated with dioxane contg. the polyester showed good skin compatibility and antibacterial activity against Escherichia coli IFO 3134 and Staphylococcus aureus IFO 12732 even after 10 washings.

IT **133750-41-1 133766-53-7**

(antibacterial, deodorizing, for finishing of textiles and paper)

RN 133750-41-1 HCA

CN Poly[oxy(2-bromo-2-nitro-1,3-propanediyl)oxycarbonyl-1,4-phenylenecarbonyl] (9CI) (CA INDEX NAME)

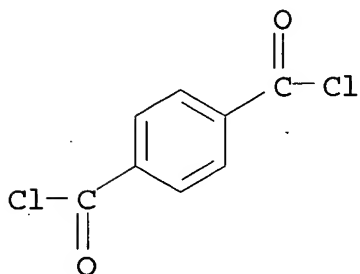


RN 133766-53-7 HCA
 CN 1,4-Benzenedicarbonyl dichloride, polymer with 2-bromo-2-nitro-1,3-propanediol (9CI) (CA INDEX NAME)

CM 1

CRN 100-20-9

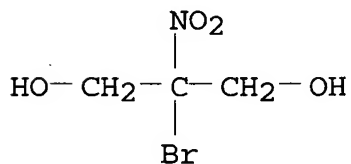
CMF C8 H4 Cl2 O2



CM 2

CRN 52-51-7

CMF C3 H6 Br N O4



IC ICM D06M015-507

ICS D06M023-00; D21H021-36

CC 40-9 (Textiles and Fibers)

Section cross-reference(s): 43

IT 133750-41-1 133766-53-7

(antibacterial, deodorizing, for finishing of textiles and paper)

L31 ANSWER 10 OF 11 HCA COPYRIGHT 2005 ACS on STN

91:216842 Polymeric biocides derived from 2-bromo-2-nitropropane-1,3-diol. Buckley, Alan John; Singer, Michael; Wild, James Harry (Imperial Chemical Industries Ltd., UK). Ger. Offen. DE 2847373 19790510, 23 pp. (German). CODEN: GWXXBX. APPLICATION: DE 1978-2847373 19781031.

AB Polymeric microbicides - [CO2CH2CBr(NO2)CH2O2CXX1X]n- (X = bond, NH; X1 = hydrocarbon; n .gtoreq.2) were prep'd. Thus, O2NCBr(CH2OH)2 was

polymd. with $\text{OCN}(\text{CH}_2)_6\text{NCO}$ to give a polymer which at 100 ppm in a metal-working oil-in-water emulsion inhibited the growth of *Pseudomonas aeruginosa* and also had fungicidal activity. The microbicides were similarly used in paints.

IT 71022-08-7P 71022-09-8P 71022-10-1P
 71022-11-2P 71022-12-3P 71022-13-4P
 71022-14-5P 71024-33-4P 71024-34-5P
 71024-35-6P 71024-37-8P 71024-38-9P
 71024-39-0P

(prepn. and microbicidal activity of)

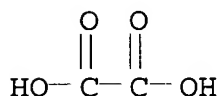
RN 71022-08-7 HCA

CN Ethanedioic acid, polymer with 2-bromo-2-nitro-1,3-propanediol (9CI)
 (CA INDEX NAME)

CM 1

CRN 144-62-7

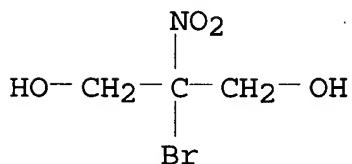
CMF C2 H2 O4



CM 2

CRN 52-51-7

CMF C3 H6 Br N O4



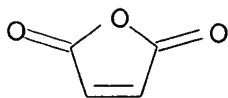
RN 71022-09-8 HCA

CN 2,5-Furandione, polymer with 2-bromo-2-nitro-1,3-propanediol (9CI)
 (CA INDEX NAME)

CM 1

CRN 108-31-6

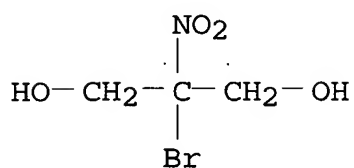
CMF C4 H2 O3



CM 2

CRN 52-51-7

CMF C3 H6 Br N O4



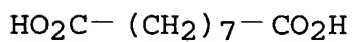
RN 71022-10-1 HCA

CN Nonanedioic acid, polymer with 2-bromo-2-nitro-1,3-propanediol. (9CI)
(CA INDEX NAME)

CM 1

CRN 123-99-9

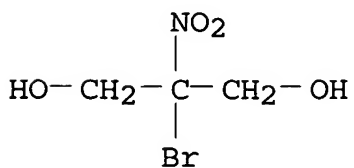
CMF C9 H16 O4



CM 2

CRN 52-51-7

CMF C3 H6 Br N O4



RN 71022-11-2 HCA

CN Propanedioic acid, polymer with 2-bromo-2-nitro-1,3-propanediol
(9CI) (CA INDEX NAME)

CM 1

CRN 141-82-2

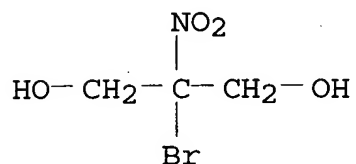
CMF C3 H4 O4



CM 2

CRN 52-51-7

CMF C3 H6 Br N O4



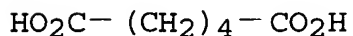
RN 71022-12-3 HCA

CN Hexanedioic acid, polymer with 2-bromo-2-nitro-1,3-propanediol (9CI)
(CA INDEX NAME)

CM 1

CRN 124-04-9

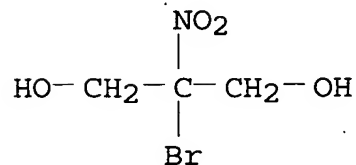
CMF C6 H10 O4



CM 2

CRN 52-51-7

CMF C3 H6 Br N O4



RN 71022-13-4 HCA

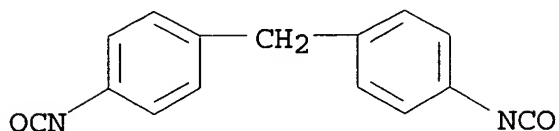
CN 1,3-Propanediol, 2-bromo-2-nitro-, polymer with 1,1'-methylenebis[4-

isocyanatobenzene] (9CI) (CA INDEX NAME)

CM 1

CRN 101-68-8

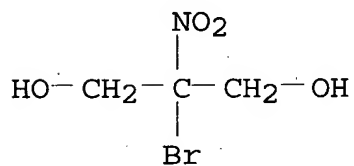
CMF C15 H10 N2 O2



CM 2

CRN 52-51-7

CMF C3 H6 Br N O4



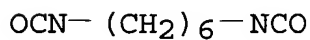
RN 71022-14-5 HCA

CN 1,3-Propanediol, 2-bromo-2-nitro-, polymer with 1,6-diisocyanatohexane (9CI) (CA INDEX NAME)

CM 1

CRN 822-06-0

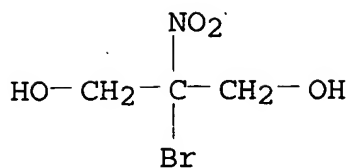
CMF C8 H12 N2 O2



CM 2

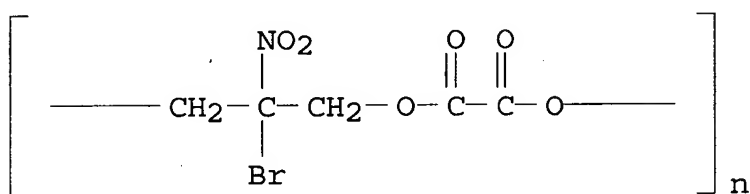
CRN 52-51-7

CMF C3 H6 Br N O4



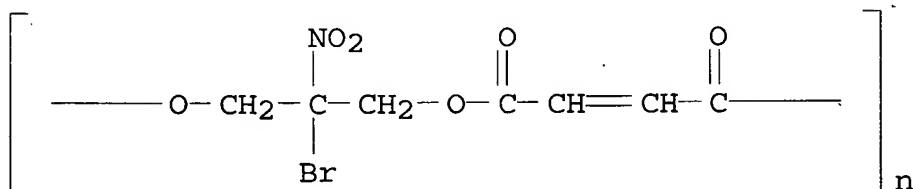
RN 71024-33-4 HCA

CN Poly[oxy(1,2-dioxo-1,2-ethanediyl)oxy(2-bromo-2-nitro-1,3-propanediyl)] (9CI) (CA INDEX NAME)



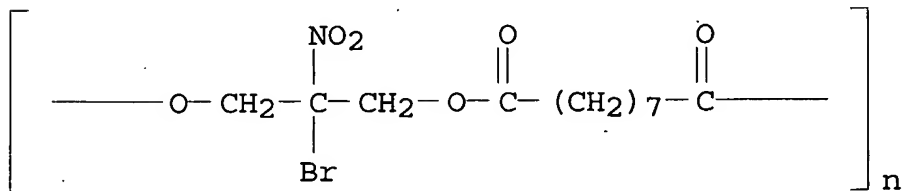
RN 71024-34-5 HCA

CN Poly[oxy(2-bromo-2-nitro-1,3-propanediyl)oxy(1,4-dioxo-2-butene-1,4-diyl)], (Z)- (9CI) (CA INDEX NAME)



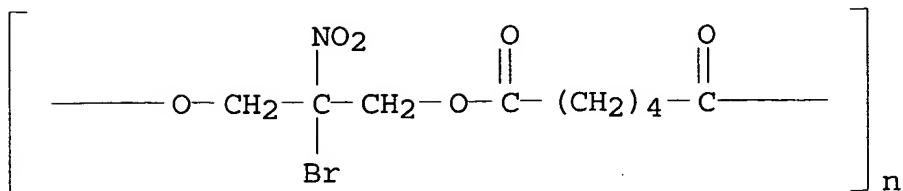
RN 71024-35-6 HCA

CN Poly[oxy(2-bromo-2-nitro-1,3-propanediyl)oxy(1,9-dioxo-1,9-nonanediyl)] (9CI) (CA INDEX NAME)



RN 71024-37-8 HCA

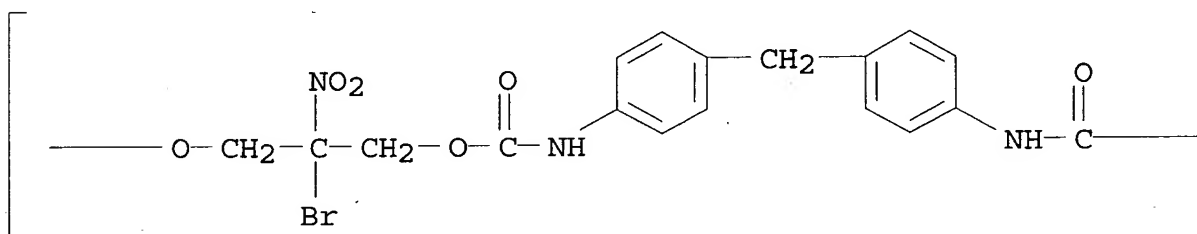
CN Poly[oxy(2-bromo-2-nitro-1,3-propanediyl)oxy(1,6-dioxo-1,6-hexanediyl)] (9CI) (CA INDEX NAME)



RN 71024-38-9 HCA

CN Poly[oxy(2-bromo-2-nitro-1,3-propanediyl)oxycarbonylimino-1,4-phenylenemethylene-1,4-phenyleneiminocarbonyl] (9CI) (CA INDEX NAME)

PAGE 1-A

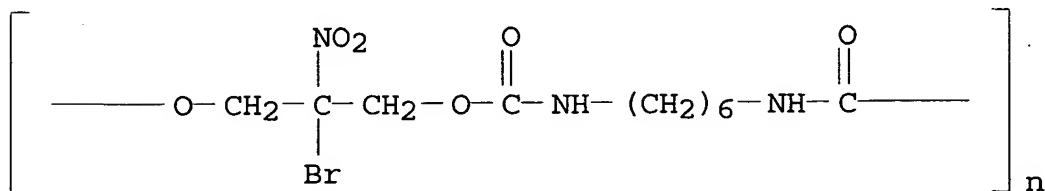


PAGE 1-B



RN 71024-39-0 HCA

CN Poly[oxy(2-bromo-2-nitro-1,3-propanediyl)oxycarbonylimino-1,6-hexanediyliminocarbonyl] (9CI) (CA INDEX NAME)



IC C08G018-32; A01N009-20; A61L013-00; C02B003-06
CC 63-8 (Pharmaceuticals)

Section cross-reference(s): 35, 42, 43, 55

IT 71022-08-7P 71022-09-8P 71022-10-1P
71022-11-2P 71022-12-3P 71022-13-4P
71022-14-5P 71024-33-4P 71024-34-5P
71024-35-6P 71024-37-8P 71024-38-9P
71024-39-0P

(prepn. and microbicidal activity of)

L31 ANSWER 11 OF 11 HCA COPYRIGHT 2005 ACS on STN

81:111473 Bromonitropropanediol polyester germicides. Watanabe, Michio;
Murayama, Yo (Permachem Asia, Ltd.). Jpn. Kokai Tokkyo Koho JP
49051391 19740518 Showa, 5 pp. (Japanese). CODEN:
JKXXAF. APPLICATION: JP 1972-92236 19720916.

GI For diagram(s), see printed CA Issue.

AB Polyesters having bromonitropropanediol residues were synthesized
from bromonitropropanediols, divalent alcs. or phenols, halides of
arom. di- or tricarboxylic acids or of fatty dicarboxylic acids,
alkyl esters or anhyd. acids. The product had high germicidal and
some other specific biol. activities. Thus, BrC(NO₂) (CH₂OH)₂ and
terephthaloyl chloride were dissolved in dioxane. The mixt. was
cooled and to this was added a pyridine-dioxane mixt. dropwise to
yield the germicidal polyester (I).

IT 52910-29-9
(bactericide)

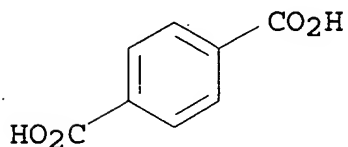
RN 52910-29-9 HCA

CN 1,4-Benzenedicarboxylic acid, polymer with 2-bromo-2-nitro-1,3-
propanediol (9CI) (CA INDEX NAME)

CM 1

CRN 100-21-0

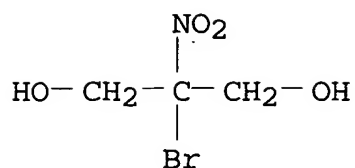
CMF C8 H6 O4



CM 2

CRN 52-51-7

CMF C3 H6 Br N O4



INCL 26(5)D121.2; 26(5)D122.2
CC 63-6 (Pharmaceuticals)
Section cross-reference(s): 25
IT 52910-29-9
(bactericide)

=> d 133 1-11 ti

- L33 ANSWER 1 OF 11 HCA COPYRIGHT 2005 ACS on STN
TI Prevention of algae formation in cooling water system
- L33 ANSWER 2 OF 11 HCA COPYRIGHT 2005 ACS on STN
TI Stabilization of aqueous solutions of aliphatic aldehydes, stabilizers, and stabilized solutions
- L33 ANSWER 3 OF 11 HCA COPYRIGHT 2005 ACS on STN
TI Slime inhibitors for papermaking
- L33 ANSWER 4 OF 11 HCA COPYRIGHT 2005 ACS on STN
TI Storage-stable water-dispersed resin compositions containing nitro alcohols or their acetates
- L33 ANSWER 5 OF 11 HCA COPYRIGHT 2005 ACS on STN
TI Synthesis of oligomeric biocides based on oxyethylene glycol carriers
- L33 ANSWER 6 OF 11 HCA COPYRIGHT 2005 ACS on STN
TI Photothermographic materials
- L33 ANSWER 7 OF 11 HCA COPYRIGHT 2005 ACS on STN
TI Halogenated chemical sensitizers for organic photoconductive compositions
- L33 ANSWER 8 OF 11 HCA COPYRIGHT 2005 ACS on STN
TI Photothermographic composition
- L33 ANSWER 9 OF 11 HCA COPYRIGHT 2005 ACS on STN
TI Photothermographic recording material

L33 ANSWER 10 OF 11 HCA COPYRIGHT 2005 ACS on STN

TI Photothermographic element and composition

L33 ANSWER 11 OF 11 HCA COPYRIGHT 2005 ACS on STN

TI Chemical transformations of 1,4-dinitro-1,3-butadienes

=> d 133 1,3,5 cbib abs hitstr hitind

L33 ANSWER 1 OF 11 HCA COPYRIGHT 2005 ACS on STN

133:34276 Prevention of algae formation in cooling water system.

Nohata, Yasuhiro (Hakuto K. K., Japan). Jpn. Kokai Tokkyo Koho JP

2000167565 A2 20000620, 6 pp. (Japanese). CODEN: JKXXAF.

APPLICATION: JP 1998-345873 19981204.

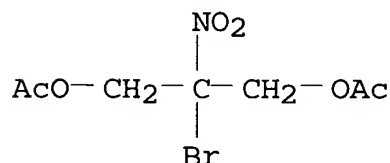
AB Recirculating water for industrial cooling or air conditioning system is treated by dosing with an algaecide mixt. contg. (a) an org. halohydrocarbon compd. having Br group attached to .alpha.- and/or .beta.-position of main C chains and 1-3 nitro groups on the main C chain, and (b) .gtoreq.1 chlorinating agents such as NaClO, Ca(ClO)2 and ClO2 for 1-30 min to prevent algae formation in the aq. system. The ratio of Br atm. in the org. halohydrocarbon compd. to effective Cl atm. in the chlorinating agent is 1:(1-10), preferably 1:(1-5).

IT 34564-38-0, 1,3-Diacetoxy-2-bromo-2-nitropropane

(algaecide mixt. contg.; in prevention of algae formation in cooling water system)

RN 34564-38-0 HCA

CN 1,3-Propanediol, 2-bromo-2-nitro-, diacetate (ester) (9CI) (CA INDEX NAME)



IC ICM C02F001-50

ICS C02F001-50; A01N033-18; A01N059-00; A01N059-08

CC 61-8 (Water)

IT 52-51-7, Myacide AS 34564-38-0, 1,3-Diacetoxy-2-bromo-2-nitropropane 69094-18-4, 2,2-Dibromo-2-nitroethanol

(algaecide mixt. contg.; in prevention of algae formation in cooling water system)

L33 ANSWER 3 OF 11 HCA COPYRIGHT 2005 ACS on STN

123:116020 Slime inhibitors for papermaking. Uejima, Takuo; Nishikawa, Takehiko; Yoshida, Michio; Watanabe, Michio (Permachem Asia Ltd,

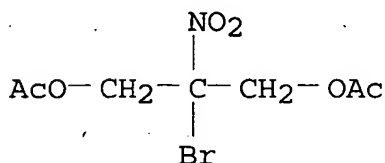
Japan). Jpn. Kokai Tokkyo Koho JP 07116669 A2 19950509
Heisei, 8 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP
1993-284156 19931020.

AB The inhibitors contain orthophthaldehyde and synergistic compds.
such as $R_1CH(OR_2)C(NO_2)Br(R_3)$ ($R_1 = H$, lower alkyl; $R_2 = H$, acyl; R_3
 $= H$, Br, lower alkyl, R_1CHOR_2), isothiazolinone compd.,
methylenebisthiocyanate, 4,5-dichloro-1,2-dithiol-3-one, etc.

IT 34564-38-0
(slime inhibitors for papermaking)

RN 34564-38-0 HCA

CN 1,3-Propanediol, 2-bromo-2-nitro-, diacetate (ester) (9CI) (CA
INDEX NAME)



IC ICM C02F001-50

ICS C02F001-50; C02F001-00; D21H017-05

CC 43-7 (Cellulose, Lignin, Paper, and Other Wood Products)
Section cross-reference(s): 5, 61

IT 52-51-7, 2-Bromo-2-nitropropane-1,3-diol 643-79-8,
1,2-Benzenedicarboxaldehyde 1192-52-5, 4,5-Dichloro-1,2-dithiol-3-
one 1897-50-3, 5-Chloro-2,4,6-trifluoroisophthalonitrile
2227-64-7 2634-33-5, 1,2-Benzisothiazolin-3-one 2682-20-4,
2-Methyl-4-isothiazolin-3-one 3737-41-5 5437-60-5 6317-18-6,
Methylenebisthiocyanate 20679-58-7, 1,4-Bis(bromoacetoxy)-2-butene
26172-55-4, 5-Chloro-2-methyl-4-isothiazolin-3-one 26530-20-1
28123-63-9 34564-38-0 55965-84-9, Kathon 886
55965-84-9D, Zonen F, salts 64359-81-5 69094-16-2,
3-Bromo-3-nitropentane-2,4-diol 109793-93-3, 2,2-Dibromo-3-
nitropropionamide
(slime inhibitors for papermaking)

L33 ANSWER 5 OF 11 HCA COPYRIGHT 2005 ACS on STN

112:157793 Synthesis of oligomeric biocides based on oxyethylene glycol
carriers. Schnabelrauch, Matthias; Carlsohn, Hartmut; Heinze,
Thomas; Hartmann, Manfred; Klemm, Dieter (Ger. Dem. Rep.).
Zeitschrift fuer Chemie, 29(8), 280-1 (German) 1989.
CODEN: ZECEAL. ISSN: 0044-2402. OTHER SOURCES: CASREACT
112:157793.

AB 2,4-Me(Cl)C₆H₃OCH₂XCO₂(CH₂CH₂O)_nXCOCH₂OC₆H₃(Cl)Me-4,2 (I, n = 2,3; X
= bond, CONH) were prepd. by treating HO(CH₂CH₂O)_nH with
2,4-Me(Cl)C₆H₃OCH₂COR (R = OH, NCO). BzO(CH₂CH₂O)₂COCH₂CH₂CO₂CHBr(N
O₂)CH₂OH and O₂NCHBr[CH₂O₂CCH₂CO(OCH₂CH₂)₂OBz]₂ were obtained from

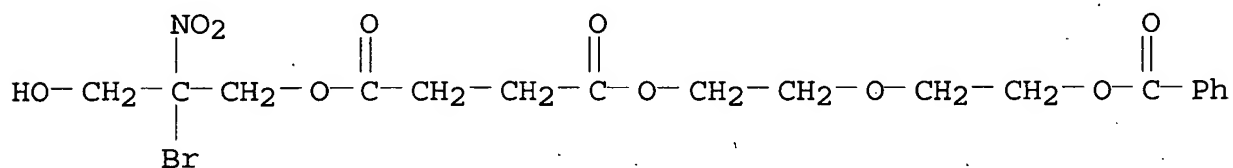
diethylene glycol by treatment with BzCl, succinic anhydride, and O₂NCHBr(CH₂OH)₂. 2,4-Me(Cl)C₆H₃OCH₂CO₂H was nearly 100% released from I (n = 2) in H₂O in 300 h.

IT 125867-96-1P 125867-97-2P

(prepn. of)

RN 125867-96-1 HCA

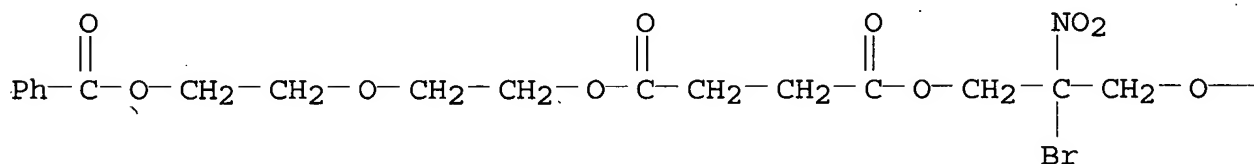
CN Butanedioic acid, 2-[2-(benzoyloxy)ethoxy]ethyl 2-bromo-3-hydroxy-2-nitropropyl ester (9CI) (CA INDEX NAME)



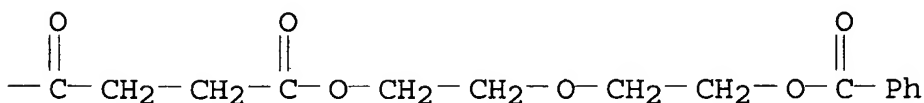
RN 125867-97-2 HCA

CN Butanedioic acid, 2-bromo-2-nitro-1,3-propanediyl bis[2-[2-(benzoyloxy)ethoxy]ethyl] ester (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



CC 25-18 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)

IT 125867-96-1P 125867-97-2P

(prepn. of)

=> d 132 1-52 cbib abs hitstr hitind

L32 ANSWER 1 OF 52 HCA COPYRIGHT 2005 ACS on STN

142:134036 Bromo/nitro-containing compounds, including BNPD esters, with antimicrobial, bioresistant and fungal resistant properties, useful in metal working fluids, and their preparation..

Daly, Thomas (USA). PCT Int. Appl. WO 2005003088 A2 20050113, 20 pp. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, TR. (English). CODEN: PIXXD2. APPLICATION: WO 2004-US19579 20040618. PRIORITY: US 2003-603356 20030625.

AB A bromine/nitro moiety linked into the backbone of an ester or other compd., and present over a wide range of occurrence rates, provides **antimicrobial**, bio-resistant, and **fungus**-resistant properties in metal-working fluids (MWFs) and other coatings. The moiety can have the bromo and nitro groups linked to the same carbon atom, or to different carbon atoms. The invention also relates to urethanes, urea, amides, imides, carbonates, ethers, siloxanes, and many other types of linkages essential to MWF bases. More generally, mols. of the formula R-C(Br)(NO₂)-R' are claimed [wherein R and R' are the same or different, and are independently chosen from groups contg. polysiloxane, linear or branched, satd. or unsatd., alkyl, alkenyl, alkylamine, alkylamide, alkylquat, alkanol, ether, polyether, arylalkyl, carboxylic acid, ester, polyester, and ketone moieties]. Also claimed are metal-working fluids, surfactants, foaming agents, and anti-foaming agents comprising such mols. Prepn. of two examples are given. In the first example, the diol BNPD (2-bromo-2-nitro-1,3-propanediol), having formula HOCH₂C(Br)(NO₂)CH₂OH, was converted to its dioleate ester (I) by heating to 352-356.degree.F with 2 equiv oleic acid and a catalytic amt. of H₂SO₄. I was included in a std. MWF base at a rate of 10% (1300 ppm BNPD) by substituting for water. When the base was subjected to ASTM 3946-92, a **bacterial** resistance test for water-dilutable metal-working fluids, it showed a **bacterial** count of 3000 CFU/mL, which is considered to be under control, whereas the control sample had a count of 107 CFU/mL, which is not considered to be under control. Even at a rate of 6%, I still controlled **bacteria** after 5 days. A slight decrease in wear was also noted in the pin and v-block tests, when using I. Another sym. BNPD deriv. was prepd. by sequential condensation with 2 equiv each of 1,2-cyclohexanedicarboxylic anhydride (HHPA), Crisamine PCD-2 (bis-ethoxylate of C14 primary coco amine), and adipic acid.

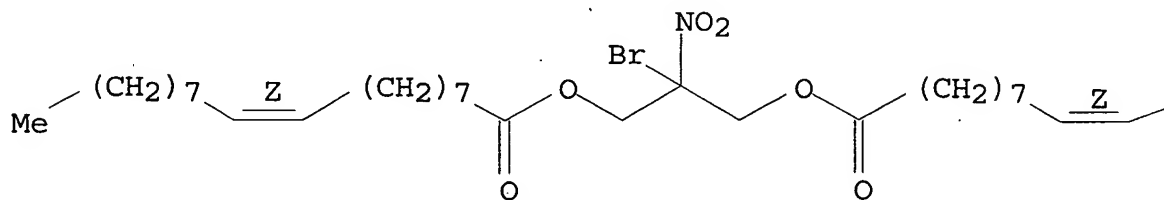
IT 824955-00-2P, BNPD dioleate 825648-23-5P
(industrial **antimicrobial** agent; prepn. of bromo/nitro-contg. compds., including BNPD esters, with **antimicrobial** properties, for use in metal working fluids)

RN 824955-00-2 HCA

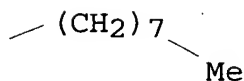
CN 9-Octadecenoic acid (9Z)-, 2-bromo-2-nitro-1,3-propanediyl ester
(9CI) (CA INDEX NAME)

Double bond geometry as shown.

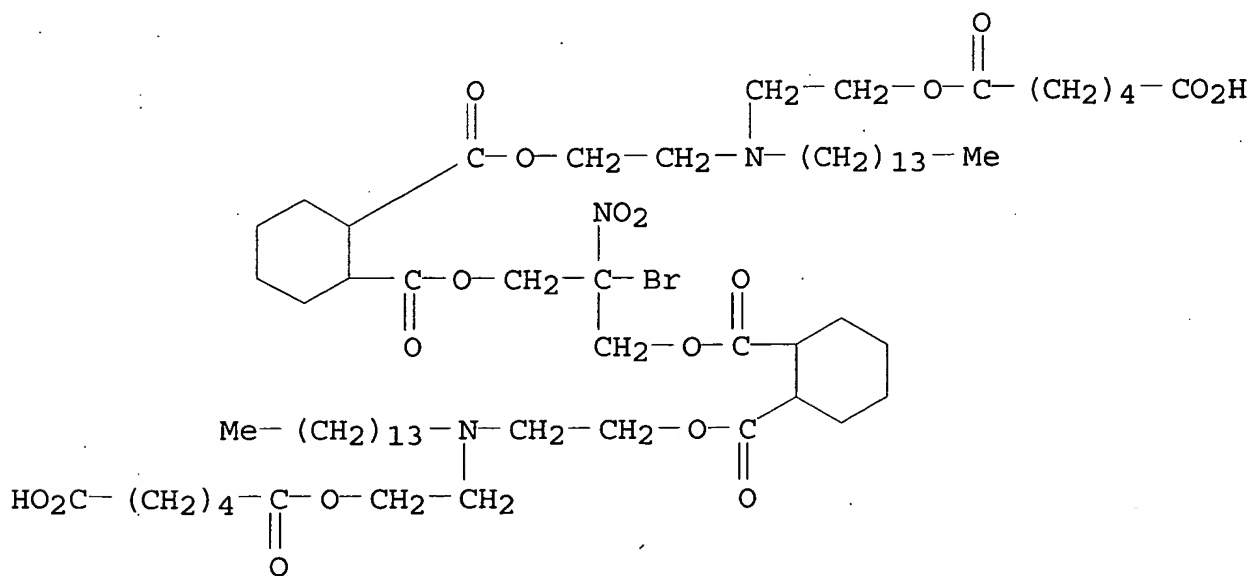
PAGE 1-A



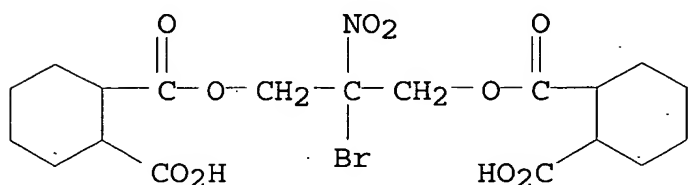
PAGE 1-B



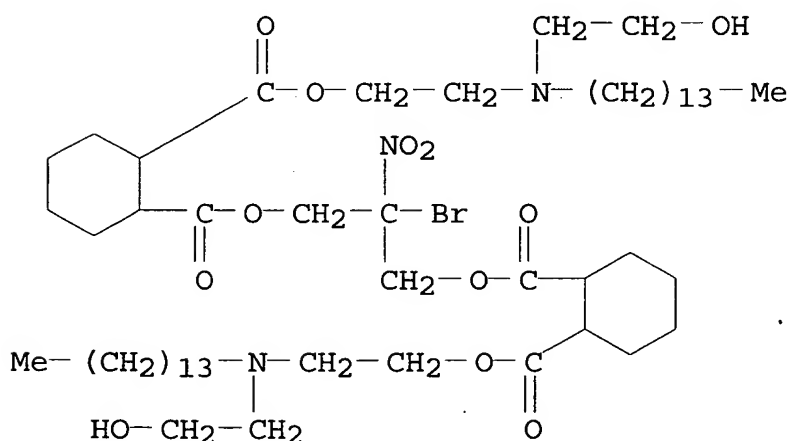
RN 825648-23-5 HCA

CN 1,2-Cyclohexanedicarboxylic acid, 2-bromo-2-nitro-1,3-propanediyl
bis[2-[[2-[(5-carboxy-1-oxopentyl)oxy]ethyl]tetradecylamino]ethyl]
ester (9CI) (CA INDEX NAME)

- IT 824955-01-3, BNPD bis(1,2-cyclohexanedicarboxylic acid anhydride) adduct 825648-22-4
 (intermediate; prepn. of bromo/nitro-contg. compds., including BNPD esters, with **antimicrobial** properties, for use in metal working fluids)
- RN 824955-01-3 HCA
- CN 1,2-Cyclohexanedicarboxylic acid, 2-bromo-2-nitro-1,3-propanediyl ester (9CI) (CA INDEX NAME)

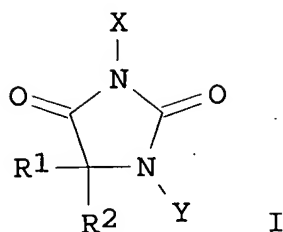


- RN 825648-22-4 HCA
- CN 1,2-Cyclohexanedicarboxylic acid, 2-bromo-2-nitro-1,3-propanediyl bis[2-[(2-hydroxyethyl)tetradecylamino]ethyl] ester (9CI) (CA INDEX NAME)

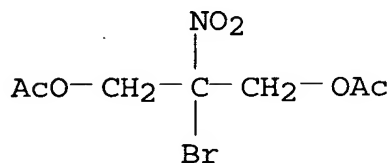


- IC ICM C07D
- CC 21-2 (General Organic Chemistry)
 Section cross-reference(s): 51
- ST bromo nitro **antimicrobial** bioresistant **antifungal**
 metal working fluid; BNPD dioleate ester prepn **antibacterial**
 metal working fluid; HHPA Crisamine PCD2 adipic acid deriv prepn **bactericidal**
- IT **Antibacterial** agents
Fungicides
 (industrial; prepn. of bromo/nitro-contg. compds., including BNPD esters, with **antimicrobial** properties, for use in metal

- working fluids)
- IT Lubricating oils
(metalworking; prepn. of bromo/nitro-contg. compds., including
BNPD esters, with **antimicrobial** properties, for use in
metal working fluids)
- IT Antifoaming agents
Foaming agents
Surfactants
(prepn. of bromo/nitro-contg. compds., including BNPD esters,
with **antimicrobial** properties, for use in metal working
fluids)
- IT 824955-00-2P, BNPD dioleate 825648-23-5P
(industrial **antimicrobial** agent; prepn. of
bromo/nitro-contg. compds., including BNPD esters, with
antimicrobial properties, for use in metal working
fluids)
- IT 824955-01-3, BNPD bis(1,2-cyclohexanedicarboxylic acid
anhydride) adduct 825648-22-4
(intermediate; prepn. of bromo/nitro-contg. compds., including
BNPD esters, with **antimicrobial** properties, for use in
metal working fluids)
- IT 85-42-7
(starting material, HHPA; prepn. of bromo/nitro-contg. compds.,
including BNPD esters, with **antimicrobial** properties,
for use in metal working fluids)
- IT 52-51-7, BNPD 112-80-1, Oleic acid, reactions 124-04-9, Adipic
acid, reactions 18924-66-8, Ethanol, 2,2'-(tetradecylimino)bis-
(starting material; prepn. of bromo/nitro-contg. compds.,
including BNPD esters, with **antimicrobial** properties,
for use in metal working fluids)
- L32 ANSWER 2 OF 52 HCA COPYRIGHT 2005 ACS on STN
141:145309 Method for **sterilization** of legionella in aqueous
systems. Morita, Masahiro (Ki Chemical Industry Co., Ltd., Japan).
Jpn. Kokai Tokkyo Koho JP 2004209395 A2 20040729, 7 pp. (Japanese).
CODEN: JKXXAF. APPLICATION: JP 2002-383770 20021230.
- GI



- AB Legionella in aq. systems is **disinfected** by addn. of hydantoin compd. I (X, Y = Br, Cl; R1, R2 C1-3 alkyl) and 2-bromo-2-nitropropane-1,3-diyl diacetate. Sp. preferable hydantoins are also given. Industrial water, etc., can be **disinfected**. 1.
- IT 34564-38-0
(**disinfection** of of legionella in aq. systems by treatment with hydantoins and bromonitropropanediyl diacetate)
- RN 34564-38-0 HCA
- CN 1,3-Propanediol, 2-bromo-2-nitro-, diacetate (ester) (9CI) (CA INDEX NAME)



- IC ICM C02F001-50
ICS A01N037-12; A01N043-50
- CC 61-5 (Water)
Section cross-reference(s): 5
- ST legionella aq system **sterilization**; industrial water **disinfection** legionella hydantoin treatment; bromonitropropanediyl diacetate water treatment legionella **disinfection**
- IT Legionella
(**disinfection** of of legionella in aq. systems by treatment with hydantoins and bromonitropropanediyl diacetate)
- IT Water purification
(**sterilization** and **disinfection**;
disinfection of of legionella in aq. systems by treatment with hydantoins and bromonitropropanediyl diacetate)
- IT 77-48-5, 1,3-Dibromo-5,5-dimethylhydantoin 118-52-5,
1,3-Dichloro-5,5-dimethylhydantoin 126-06-7, 3-Bromo-1-chloro-5,5-dimethylhydantoin 16079-88-2, 1-Bromo-3-chloro-5,5-

dimethylhydantoin 34564-38-0 89415-87-2,
 1,3-Dichloro-5-ethyl-5-methylhydantoin
 (disinfection of of legionella in aq. systems by
 treatment with hydantoins and bromonitropropanediyl diacetate)

L32 ANSWER 3 OF 52 HCA COPYRIGHT 2005 ACS on STN

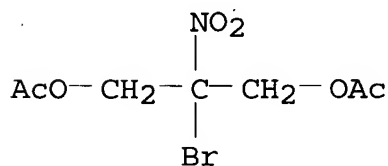
140:89292 Method for control of microorganisms in water systems under
 reducing atmosphere. Nohata, Yasuhiro (Hakuto Co., Ltd., Japan).
 Jpn. Kokai Tokkyo Koho JP 2004018398 A2 20040122, 17 pp.
 (Japanese). CODEN: JKXXAF. APPLICATION: JP 2002-171857 20020612.

AB Microorganisms in water systems under reducing atm. are controlled
 by combined addn. of (A) phosphonic acids $R_1P(O)(OH)_2$ [$R_1 = C_2-8$
 (hydroxy)alkyl-mono- to tricarboxylic acid group] or $R_2[P(O)(OH)_2]_2$
 [$R_2 = C_1-12$ (hydroxy)alkylene], H_3PO_4 , polyphosphoric acids, and/or
 their alkali metal salts and (B) **microbicides** selected
 from org. halides, org. nitrogen-sulfur compds., compds. generating
 $HClO$ or $HBrO$ in water, and their salts. *Pseudomonas aeruginosa* in
 water systems contg. 0, 5, 25, 50, and 100 mg/L of SO_3^{2-} was almost
 totally controlled by addn. of H_3PO_4 and DBNPA (2,2-dibromo-3-
 nitrilopropionamide) at 200 and 5 mg/L, resp. The method is useful
 for control of **bacteria** and **fungi** in water
 systems in pulp bleaching and papermaking processes.

IT 34564-38-0, 1,3-Diacetoxy-2-bromo-2-nitropropane
 (Bromonil A 100; control of microorganisms in water systems under
 reducing atm. with P compds. and **microbicides**)

RN 34564-38-0 HCA

CN 1,3-Propanediol, 2-bromo-2-nitro-, diacetate (ester) (9CI) (CA
 INDEX NAME)



IC ICM A01N025-02

ICS A01N033-20; A01N037-02; A01N037-18; A01N043-50; A01N043-64;
 A01N043-80; A01N057-20; A01N059-08; A01N059-26; C02F001-50

CC 5-2 (Agrochemical Bioregulators)
 Section cross-reference(s): 43, 61

ST **microbicide** phosphate water system reducing atm;
 phosphonate polyphosphate **microbicide** water pulp
 bleaching; papermaking sulfite water **microbicide** halide
 phosphate; **bactericide fungicide**
 bromonitrilopropionamide phosphate water papermaking

IT Industrial process waters
 (control of microorganisms in water systems under reducing atm.)

- with P compds. and **microbicides**)
- IT Hypochlorites
(control of microorganisms in water systems under reducing atm.
with P compds. and **microbicides**)
- IT Phosphates, biological studies
(control of microorganisms in water systems under reducing atm.
with P compds. and **microbicides**)
- IT Polyphosphoric acids
(control of microorganisms in water systems under reducing atm.
with P compds. and **microbicides**)
- IT Hypohalites
(hypobromites; control of microorganisms in water systems under
reducing atm. with P compds. and **microbicides**)
- IT **Antibacterial agents**
Antimicrobial agents
Fungicides
(industrial; control of microorganisms in water systems under
reducing atm. with P compds. and **microbicides**)
- IT Paper
(papermaking water systems; control of microorganisms in water
systems under reducing atm. with P compds. and
microbicides)
- IT Water purification
(**sterilization and disinfection**; control of
microorganisms in water systems under reducing atm. with P
compds. and **microbicides**).
- IT Sulfites
Thiosulfates
(water systems contg.; control of microorganisms in water systems
under reducing atm. with P compds. and **microbicides**)
- IT Pulp bleaching
(water systems; control of microorganisms in water systems under
reducing atm. with P compds. and **microbicides**)
- IT 37971-36-1, 2-Phosphonobutane-1,2,4-tricarboxylic acid
(Belclene 650; control of microorganisms in water systems under
reducing atm. with P compds. and **microbicides**)
- IT 2809-21-4, 1-Hydroxyethylidene-1,1-diphosphonic acid
(Belclene 660; control of microorganisms in water systems under
reducing atm. with P compds. and **microbicides**)
- IT 34564-38-0, 1,3-Diacetoxy-2-bromo-2-nitropropane
(Bromonil A 100; control of microorganisms in water systems under
reducing atm. with P compds. and **microbicides**)
- IT 1192-52-5, **Microban 86**
(**Microban 86**; control of microorganisms in water
systems under reducing atm. with P compds. and
microbicides)
- IT 52-51-7, BNPD 77-48-5, 1,3-Dibromo-5,5-dimethylhydantoin
87-90-1, Trichloroisocyanuric acid 118-52-5, 1,3-Dichloro-5,5-

dimethylhydantoin 2782-57-2, Dichloroisocyanuric acid 3785-34-0,
 BBAE 7681-52-9, Sodium hypochlorite 10222-01-2, DBNPA
 16079-88-2, Bromicide 20679-58-7, BBAB 26530-20-1,
 2-n-Octyl-4-isothiazolin-3-one 34911-46-1, HP 100 64359-81-5,
 Klarix 4000 69094-18-4, Dibnirol

(control of microorganisms in water systems under reducing atm.
 with P compds. and **microbicides**)

IT 7664-38-2, Phosphoric acid, biological studies 23783-26-8, Belcor
 575

(control of microorganisms in water systems under reducing atm.
 with P compds. and **microbicides**)

L32 ANSWER 4 OF 52 HCA COPYRIGHT 2005 ACS on STN

139:175193 Industrial **sterilization** by synergistic
microbicides. Morita, Masahiro (Ki Chemical Industry Co.,
 Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2003246703 A2 20030902, 6
 pp: (Japanese). CODEN: JKXXAF. APPLICATION: JP 2002-47511
 20020225.

AB 2-Bromo-2-nitropropane-1,3-di-yl diacetate and 2-bromo-3-hydroxy-2-
 nitropropyl acetate mixt. or in combination are synergistic
microbicides useful in industries, for example, those
 dealing with circulating cooling water, manufg. papers or textiles.

IT 581071-22-9
 (for industrial **sterilization** by synergistic
microbicides)

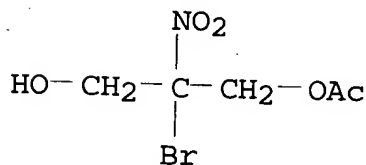
RN 581071-22-9 HCA

CN 1,3-Propanediol, 2-bromo-2-nitro-, diacetate (ester), mixt. with
 2-bromo-3-hydroxy-2-nitropropyl acetate (9CI) (CA INDEX NAME)

CM 1

CRN 117552-11-1

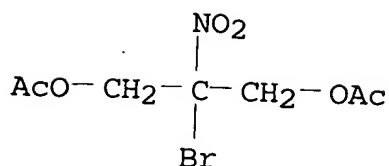
CMF C5 H8 Br N O5



CM 2

CRN 34564-38-0

CMF C7 H10 Br N O6



- IC ICM A01N037-02
ICS C02F001-50
- CC 5-2 (Agrochemical Bioregulators)
- ST synergism **microbicide sterilization** industry
paper textile slurry
- IT **Sterilization and Disinfection**
(industrial **sterilization** by synergistic
microbicides)
- IT **Antimicrobial agents**
Slurries
(**sterilization** by synergistic **microbicides** in
industry dealing with)
- IT Paper
Textiles
(**sterilization** by synergistic **microbicides** in
industry manufg.)
- IT 581071-22-9
(for industrial **sterilization** by synergistic
microbicides)
- L32 ANSWER 5 OF 52 HCA COPYRIGHT 2005 ACS on STN
139:32087 Synergistic broad-spectrum long-lasting industrial
sterilizing/antiseptic agents containing bromonitro
alcohols, and **sterilizing/antiseptic** method. Morita,
Masahiro; Fukuyama, Shoji; Isogai, Katsuhisa (K. I. Kasei K. K.,
Japan). Jpn. Kokai Tokkyo Koho JP 2003171209 A2 20030617, 14 pp.
(Japanese). CODEN: JKXXAF. APPLICATION: JP 2002-277835 20020924.
PRIORITY: JP 2001-294780 20010926.
- AB Title agents, esp. useful for circulating water system, contain
2-bromo-2-nitropropane-1,3-diyl diformate (I) and conventional
antimicrobial agents, including 2-bromo-2-nitropropane-1,3-
diol, 2,2-dibromo-2-nitroethanol (II), 1,4-bis(bromoacetoxy)-2-
butene, 1,2-bis(bromoacetoxy)ethane, 2-bromo-2-nitropropane-1,3-diyl
diacetate, and 2,2-dibromo-2-nitroethyl acetate. Three more
combinations of synergistic agents are also claimed. Thus, a
10:30:60 mixt. of I, II, and polyethylene glycol at 10 ppm showed
synergistic **antimicrobial** activity against *Pseudomonas*
aeruginosa and *Geotrichum candidum*.
- IT 34564-38-0D, mixts. contg. 53607-71-9D, mixts.
contg. 80658-59-9D, mixts. contg. 540741-86-4

540741-87-5 540741-88-6 540741-89-7

540741-90-0 540741-91-1 540741-92-2

540741-93-3 540741-94-4 540741-95-5

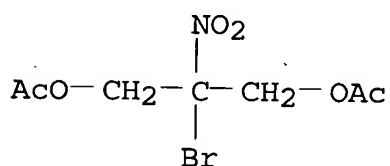
540741-96-6 540741-97-7 540741-98-8

540741-99-9 540742-00-5 540742-01-6

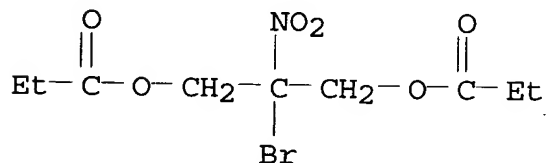
540742-10-7 540742-11-8 540742-12-9

(synergistic broad-spectrum industrial **sterilizing**
/antiseptic agents contg. bromonitro alcs.)

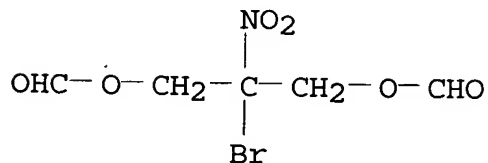
RN 34564-38-0 HCA

CN 1,3-Propanediol, 2-bromo-2-nitro-, diacetate (ester) (9CI) (CA
INDEX NAME)

RN 53607-71-9 HCA

CN 1,3-Propanediol, 2-bromo-2-nitro-, dipropanoate (ester) (9CI) (CA
INDEX NAME)

RN 80658-59-9 HCA

CN 1,3-Propanediol, 2-bromo-2-nitro-, diformate (ester) (9CI) (CA
INDEX NAME)

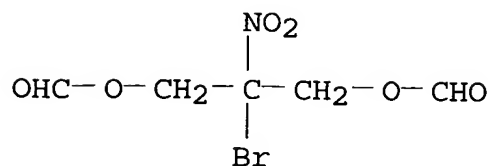
RN 540741-86-4 HCA

CN 1,3-Propanediol, 2-bromo-2-nitro-, mixt. with 2-bromo-2-nitro-1,3-
propanediyl diformate (9CI) (CA INDEX NAME)

CM 1

CRN 80658-59-9

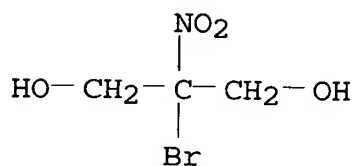
CMF C5 H6 Br N O6



CM 2

CRN 52-51-7

CMF C3 H6 Br N O4



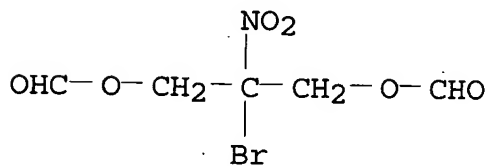
RN 540741-87-5 HCA

CN 1,3-Propanediol, 2-bromo-2-nitro-, diformate (ester), mixt. with 2,2-dibromo-2-nitroethanol (9CI) (CA INDEX NAME)

CM 1

CRN 80658-59-9

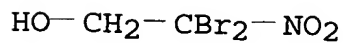
CMF C5 H6 Br N O6



CM 2

CRN 69094-18-4

CMF C2 H3 Br2 N O3



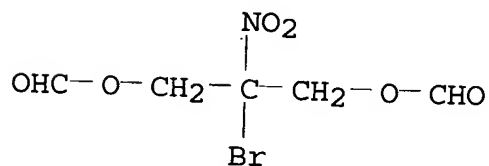
RN 540741-88-6 HCA

CN 1,3-Benzenedicarbonitrile, 5-chloro-2,4,6-trifluoro-, mixt. with
2-bromo-2-nitro-1,3-propanediyl diformate (9CI) (CA INDEX NAME)

CM 1

CRN 80658-59-9

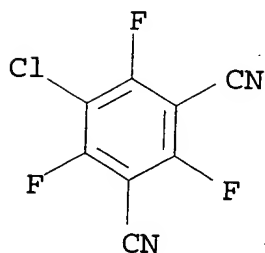
CMF C5 H6 Br N O6



CM 2

CRN 1897-50-3

CMF C8 Cl F3 N2



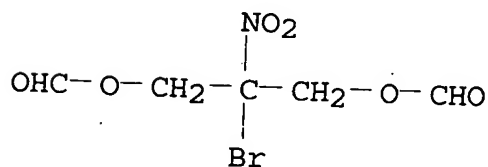
RN 540741-89-7 HCA

CN 1-Decanaminium, N-decyl-N,N-dimethyl-, chloride, mixt. with
1,2-benzenedicarboxaldehyde and 2-bromo-2-nitro-1,3-propanediyl
diformate (9CI) (CA INDEX NAME)

CM 1

CRN 80658-59-9

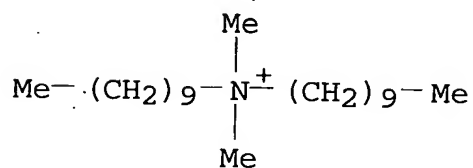
CMF C5 H6 Br N O6



CM 2

CRN 7173-51-5

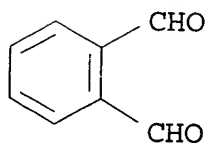
CMF C22 H48 N . Cl

● Cl⁻

CM 3

CRN 643-79-8

CMF C8 H6 O2



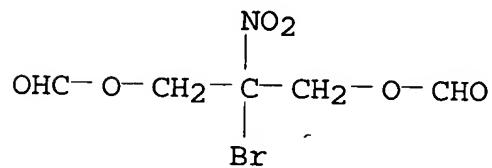
RN 540741-90-0 HCA

CN 1,3-Propanediol, 2-bromo-2-nitro-, diacetate (ester), mixt. with
2-bromo-2-nitro-1,3-propanediyl diformate and 2,2-dibromo-2-
nitroethanol (9CI) (CA INDEX NAME)

CM 1

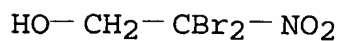
CRN 80658-59-9

CMF C5 H6 Br N O6



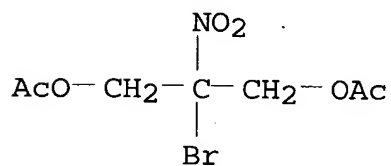
CM 2

CRN 69094-18-4
CMF C2 H3 Br2 N O3



CM 3

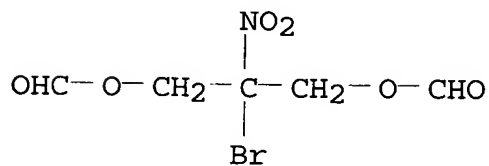
CRN 34564-38-0
CMF C7 H10 Br N O6



RN 540741-91-1 HCA
CN Acetic acid, bromo-, 1,2-ethanediyl ester, mixt. with
2-bromo-2-nitro-1,3-propanediyl diformate (9CI) (CA INDEX NAME)

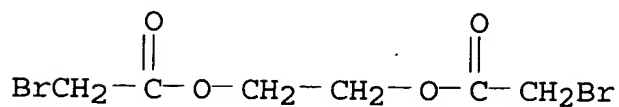
CM 1

CRN 80658-59-9
CMF C5 H6 Br N O6



CM 2

CRN 3785-34-0
CMF C6 H8 Br2 O4



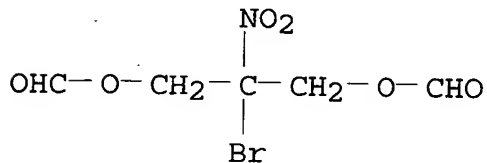
RN 540741-92-2 HCA

CN Thiocyanic acid, methylene ester, mixt. with 2-bromo-2-nitro-1,3-propanediyl diformate (9CI) (CA INDEX NAME)

CM 1

CRN 80658-59-9

CMF C5 H6 Br N O6



CM 2

CRN 6317-18-6

CMF C3 H2 N2 S2



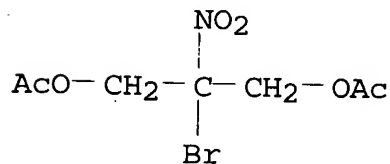
RN 540741-93-3 HCA

CN 3(2H)-Isothiazolone, 2-octyl-, mixt. with 2-bromo-2-nitro-1,3-propanediyl diacetate (9CI) (CA INDEX NAME)

CM 1

CRN 34564-38-0

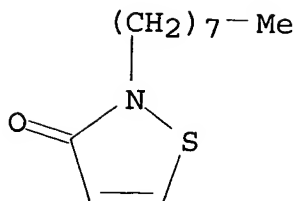
CMF C7 H10 Br N O6



CM 2

CRN 26530-20-1

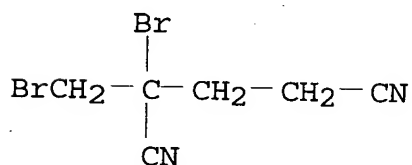
CMF C11 H19 N O S



RN 540741-94-4 HCA
 CN Pentanedinitrile, 2-bromo-2-(bromomethyl)-, mixt. with
 2-bromo-2-nitro-1,3-propanediyl diacetate (9CI) (CA INDEX NAME)

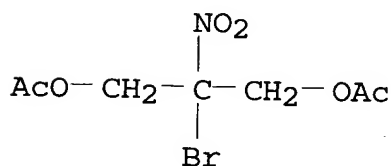
CM 1

CRN 35691-65-7
 CMF C6 H6 Br2 N2



CM 2

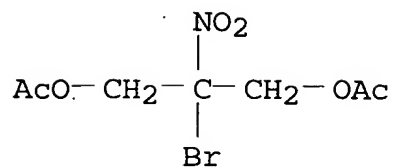
CRN 34564-38-0
 CMF C7 H10 Br N O6



RN 540741-95-5 HCA
 CN 1,3-Propanediol, 2-bromo-2-nitro-, mixt. with 2-bromo-2-nitro-1,3-
 propanediyl diacetate (9CI) (CA INDEX NAME)

CM 1

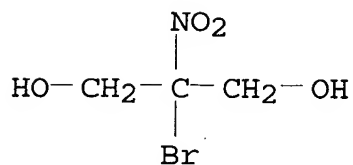
CRN 34564-38-0
 CMF C7 H10 Br N O6



CM 2

CRN 52-51-7

CMF C3 H6 Br N O4



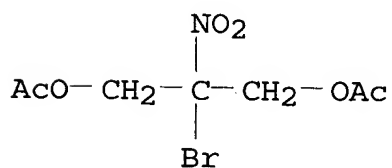
RN 540741-96-6 HCA

CN 1-Decanaminium, N-decyl-N,N-dimethyl-, chloride, mixt. with
2-bromo-2-nitro-1,3-propanediyl diacetate (9CI) (CA INDEX NAME)

CM 1

CRN 34564-38-0

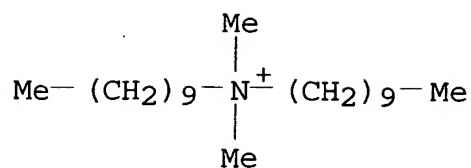
CMF C7 H10 Br N O6



CM 2

CRN 7173-51-5

CMF C22 H48 N . Cl



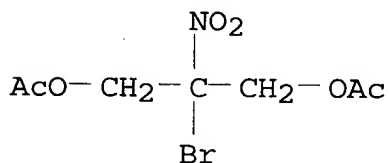
● Cl⁻

RN 540741-97-7 HCA
 CN 1,2-Benzisothiazol-3(2H)-one, mixt. with 2-bromo-2-nitro-1,3-propanediyl diacetate (9CI) (CA INDEX NAME)

CM 1

CRN 34564-38-0

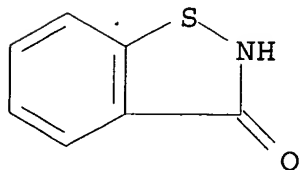
CMF C7 H10 Br N O6



CM 2

CRN 2634-33-5

CMF C7 H5 N O S

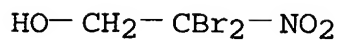


RN 540741-98-8 HCA
 CN 1,3-Propanediol, 2-bromo-2-nitro-, dipropanoate (ester), mixt. with 2,2-dibromo-2-nitroethanol (9CI) (CA INDEX NAME)

CM 1

CRN 69094-18-4

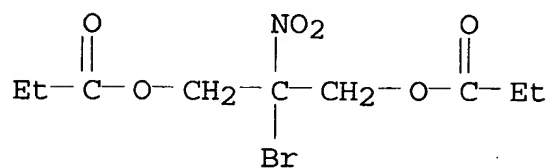
CMF C2 H3 Br2 N O3



CM 2

CRN 53607-71-9

CMF C9 H14 Br N O6



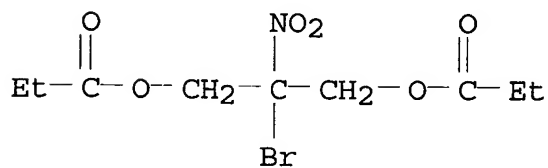
RN 540741-99-9 HCA

CN 1,3-Propanediol, 2-bromo-2-nitro-, mixt. with 2-bromo-2-nitro-1,3-propanediyl dipropanoate (9CI) (CA INDEX NAME)

CM 1

CRN 53607-71-9

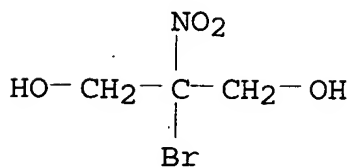
CMF C9 H14 Br N O6



CM 2

CRN 52-51-7

CMF C3 H6 Br N O4



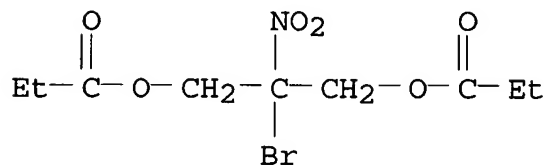
RN 540742-00-5 HCA

CN 1,3-Propanediol, 2-bromo-2-nitro-, diacetate (ester), mixt. with
2-bromo-2-nitro-1,3-propanediyl dipropanoate (9CI) (CA INDEX NAME)

CM 1

CRN 53607-71-9

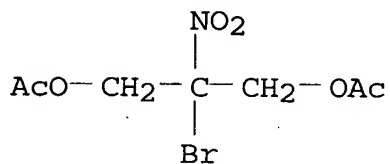
CMF C9 H14 Br N O6



CM 2

CRN 34564-38-0

CMF C7 H10 Br N O6



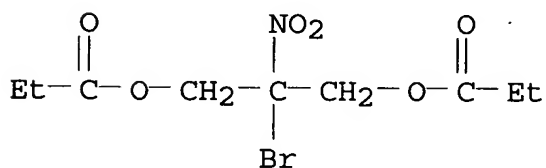
RN 540742-01-6 HCA

CN 3(2H)-Isothiazolone, 2-octyl-, mixt. with 2-bromo-2-nitro-1,3-
propanediyl dipropanoate (9CI) (CA INDEX NAME)

CM 1

CRN 53607-71-9

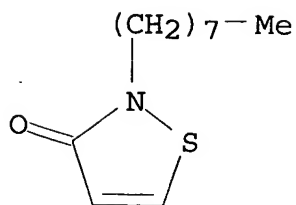
CMF C9 H14 Br N O6



CM 2

CRN 26530-20-1

CMF C11 H19 N O S



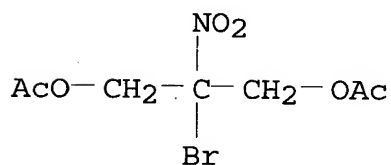
RN 540742-10-7 HCA

CN 1,3-Benzenedicarbonitrile, 2,4,5,6-tetrafluoro-, mixt. with
2-bromo-2-nitro-1,3-propanediyl diacetate (9CI) (CA INDEX NAME)

CM 1

CRN 34564-38-0

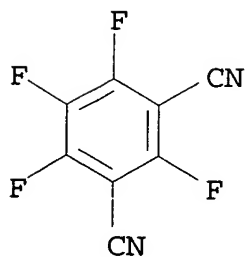
CMF C7 H10 Br N O6



CM 2

CRN 2377-81-3

CMF C8 F4 N2

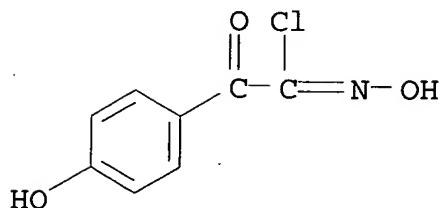


RN 540742-11-8 HCA

CN Benzeneethanimidoyl chloride, N,4-dihydroxy-.alpha.-oxo-, mixt. with
2-bromo-2-nitro-1,3-propanediyl diacetate (9CI) (CA INDEX NAME)

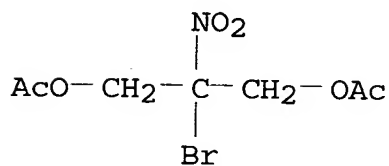
CM 1

CRN 34911-46-1
CMF C8 H6 Cl N O3



CM 2

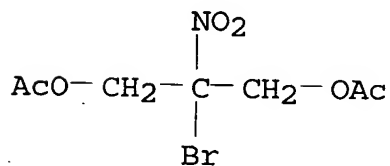
CRN 34564-38-0
CMF C7 H10 Br N O6



RN 540742-12-9 HCA
CN 2,5-Pyrrolidinedione, 1-bromo-, mixt. with 2-bromo-2-nitro-1,3-propanediyl diacetate (9CI) (CA INDEX NAME)

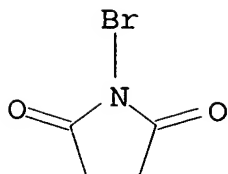
CM 1

CRN 34564-38-0
CMF C7 H10 Br N O6



CM 2

CRN 128-08-5
CMF C4 H4 Br N O2



- IC ICM A01N037-12
ICS A01N033-12; A01N033-18; A01N033-20; A01N035-02; A01N035-04;
A01N035-10; A01N037-02; A01N037-32; A01N037-34; A01N043-10;
A01N043-40; A01N043-50; A01N043-64; A01N043-80; A01N047-44;
A01N047-48
- CC 5-2 (Agrochemical Bioregulators)
Section cross-reference(s): 43, 61
- ST synergistic industrial **antibacterial antifungal**
bromonitropropanediyl formate bromonitroethanol; water synergistic
sterilization bromonitro alc
- IT Quaternary ammonium compounds, biological studies
(alkylbenzyltrimethyl, chlorides, mixts. contg.; synergistic
broad-spectrum industrial **sterilizing/antiseptic** agents
contg. bromonitro alcs.)
- IT **Antibacterial** agents
Fungicides
(industrial, synergistic; synergistic broad-spectrum industrial
sterilizing/antiseptic agents contg. bromonitro alcs.)
- IT Biocides
(slimicides; synergistic broad-spectrum industrial
sterilizing/antiseptic agents contg. bromonitro alcs.)
- IT Water purification
(**sterilization** and **disinfection**; synergistic
broad-spectrum industrial **sterilizing/antiseptic** agents
contg. bromonitro alcs.)
- IT Paper
(white water; synergistic broad-spectrum industrial
sterilizing/antiseptic agents contg. bromonitro alcs.)
- IT 52-51-7D, 2-Bromo-2-nitropropane-1,3-diol, mixts. contg. 77-48-5D,
1,3-Dibromo-5,5-dimethylhydantoin, mixts. contg. 111-30-8D,
Glutaraldehyde, mixts. contg. 118-52-5D, 1,3-Dichloro-5,5-
dimethylhydantoin, mixts. contg. 123-03-5D, Cetylpyridinium
chloride, mixts. contg. 126-06-7D, 3-Bromo-1-chloro-5,5-
dimethylhydantoin, mixts. contg. 128-08-5D, N-Bromosuccinimide,
mixts. contg. 128-09-6D, N-Chlorosuccinimide, mixts. contg.
643-79-8D, 1,2-Benzenedicarboxaldehyde, mixts. contg. 1897-50-3D,
5-Chloro-2,4,6-trifluoroisophthalonitrile, mixts. contg.
2377-81-3D, 2,4,5,6-Tetrafluoroisophthalonitrile, mixts. contg.
2634-33-5D, 1,2-Benzisothiazolin-3-one, mixts. contg. 2682-20-4D,
2-Methyl-4-isothiazolin-3-one, mixts. contg. 3737-41-5D,

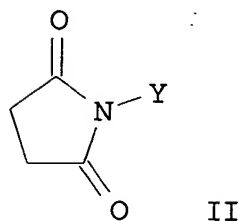
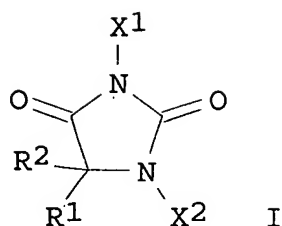
3,3,4,4-Tetrachlorotetrahydrothiophene-1,1-dioxide, mixts. contg.
3785-34-0D, 1,2-Bis(bromoacetoxy)ethane, mixts. contg. 4719-04-4D,
Hexahydro-1,3,5-tris(2-hydroxyethyl)-s-triazine, mixts. contg.
6317-18-6D, Methylene bithiocyanate, mixts. contg. 7166-19-0D,
.beta.-Bromo-.beta.-nitrostyrene, mixts. contg. 7173-51-5D,
Didecyldimethylammonium chloride, mixts. contg. 7779-27-3D,
Hexahydro-1,3,5-triethyl-s-triazine, mixts. contg. 10222-01-2D,
2,2-Dibromo-3-nitrilopropionamide, mixts. contg. 16079-88-2D,
1-Bromo-3-chloro-5,5-dimethylhydantoin, mixts. contg. 18472-51-0D,
Chlorhexidine gluconate, mixts. contg. 20679-58-7D,
1,4-Bis(bromoacetoxy)-2-butene, mixts. contg. 26530-20-1D,
2-n-Octyl-4-isothiazolin-3-one, mixts. contg. 32289-58-0D,
Poly(hexamethylene biguanide) hydrochloride, mixts. contg.
34564-38-0D, mixts. contg. 34911-46-1D, mixts. contg.
35691-65-7D, 1,2-Dibromo-2,4-dicyanobutane, mixts. contg.
53607-71-9D, mixts. contg. 64359-81-5D,
4,5-Dichloro-2-octyl-isothiazolin-3-one, mixts. contg.
69094-18-4D, 2,2-Dibromo-2-nitroethanol, mixts. contg.
80658-59-9D, mixts. contg. 89415-87-2D,
1,3-Dichloro-5,5-ethylmethylhydantoin, mixts. contg. 133346-10-8D,
mixts. contg. 540741-86-4 540741-87-5
540741-88-6 540741-89-7 540741-90-0
540741-91-1 540741-92-2 540741-93-3
540741-94-4 540741-95-5 540741-96-6
540741-97-7 540741-98-8 540741-99-9
540742-00-5 540742-01-6 540742-02-7
540742-03-8 540742-04-9 540742-05-0 540742-06-1 540742-07-2
540742-08-3 540742-09-4 540742-10-7 540742-11-8
540742-12-9

(synergistic broad-spectrum industrial sterilizing
/antiseptic agents contg. bromonitro alcs.)

L32 ANSWER 6 OF 52 HCA COPYRIGHT 2005 ACS on STN

138:20903 Liquid deodorant killing microorganism and method of
microorganism-killing deodorization in paper industries. Komatsu,
Masanori; Morita, Masahiro; Isogai, Katsuhisa (K.I Chemical Industry
Co., Ltd., Japan). PCT Int. Appl. WO 2002100174 A1 20021219
, 29 pp. DESIGNATED STATES: W: CA, CN, ID, IN, KR, US; RW: AT, BE,
CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR.
(Japanese). CODEN: PIXXD2. APPLICATION: WO 2002-JP5593 20020606.
PRIORITY: JP 2001-174176 20010608.

GI



AB A deodorant which is in a liq. form easy to handle and has excellent long-term storage stability is presented. It contains at least one member selected from the group consisting of halogenated dialkylhydantoins represented by the general formula (I) where X1 and X2 = halo; R1 and R2 = lower alkyl, and halogenated succinimides represented by the general formula (II) where Y = halo, in combination with .gtoreq. 1 member selected from the group consisting of tetrahydro-thiophene 1,1-dioxide, 3-methyltetrahydrothiophene 1,1-dioxide, and 2,5-dihydro-thiophene 1,1-dioxide.

IT 478165-80-9

(synergistic deodorant and **antimicrobial** hydantoin derivs. in slurry for paper industries)

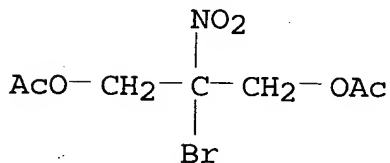
RN 478165-80-9 HCA

CN 2,4-Imidazolidinedione, 1,3-dibromo-5,5-dimethyl-, mixt. with 2-bromo-2-nitro-1,3-propanediyl diacetate and tetrahydrothiophene 1,1-dioxide (9CI) (CA INDEX NAME)

CM 1

CRN 34564-38-0

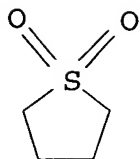
CMF C7 H10 Br N O6



CM 2

CRN 126-33-0

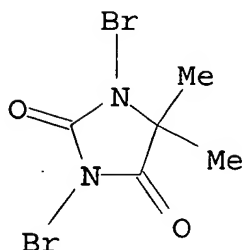
CMF C4 H8 O2 S



CM 3

CRN 77-48-5

CMF C5 H6 Br2 N2 O2



IC ICM A01N043-50
ICS A01N043-10; A01N037-32; C02F001-50

CC 5-2 (Agrochemical Bioregulators)
Section cross-reference(s): 43

ST synergism **antimicrobial** hydantoin deriv slurry
microorganism paper industry

IT Paper
Slurries
(synergistic deodorant and **antimicrobial** hydantoin
derivs. for paper industries)

IT **Antimicrobial** agents
Deodorants
(synergistic; deodorant and **antimicrobial** hydantoin
derivs. for paper industries)

IT 77-48-5, 1,3-Dibromo-5,5-dimethylhydantoin 77-79-2,
2,5-Dihydro-thiophene 1,1-dioxide 118-52-5, 1,3-Dichloro-5,5-
dimethylhydantoin 126-06-7, 3-Bromo-1-chloro-5,5-dimethylhydantoin
126-33-0, Tetrahydro-thiophene 1,1-dioxide 128-08-5,
N-Bromosuccinimide 128-09-6, N-Chlorosuccinimide 872-93-5,
3-Methyltetrahydrothiophene 1,1-dioxide 16079-88-2,
1-Bromo-3-chloro-5,5-dimethylhydantoin 89415-87-2,
1,3-Dichloro-5-ethyl-5-methylhydantoin 478165-68-3 478165-69-4
478165-70-7 478165-71-8 478165-72-9 478165-73-0 478165-74-1
478165-75-2 478165-76-3 478165-77-4 478165-78-5 478165-79-6

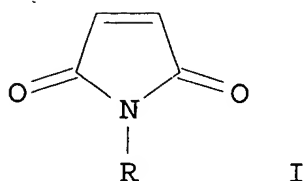
478165-80-9

(synergistic deodorant and **antimicrobial** hydantoin
derivs. in slurry for paper industries)

L32 ANSWER 7 OF 52 HCA COPYRIGHT 2005 ACS on STN

132:190835 Synergistic industrial **bactericides** and**disinfection** method using these mixtures containingmaleimides. Tsuji, Katsuji; Tanaka, Yuko (Katayama Chemical, Inc.,
Japan). Jpn. Kokai Tokkyo Koho JP 2000063209 A2 **20000229**,18 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1999-106712
19990414. PRIORITY: JP 1998-165320 19980612.

GI

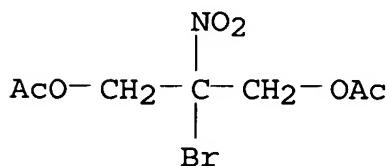


AB Industrial agents which show marked **antimicrobial** effect
against various **bacteria** at low added amts. contain as the
1st active component maleimides I (R = H, cycloalkyl or
(hydroxy-substituted) C1-12 alkyl) and as the 2nd component selected
from known **microbicides**, including bromo compds. contg.
cyano or nitro groups, oximes, isothiazolinones,
4,5-dichloro-1,2-dithiol-3-one, methylene bis(thiocyanate), and
aldehydes in synergistic ratios. Thus, the min. inhibitory concn.
(MIC) of 5-chloro-2-methyl-4-isothiazolin-3-one-maleimide mixt.
(1:9) in medium contg. papermaking white water filtrate (viable cell
count of 6.5 .times. 10⁵ CFU/mL) was 0.3 mg/L .cntdot. 24 h; MICs
for maleimide and 5-chloro-2-methyl-4-isothiazolin-3-one alone were
2 and 1 mg/L .cntdot. 24 h, resp.

IT **34564-38-0D**, mixts. with maleimides **259855-20-4**
(**microbicidal** mixts. contg. maleimides and method for
disinfecting papermaking white water and latex)

RN 34564-38-0 HCA

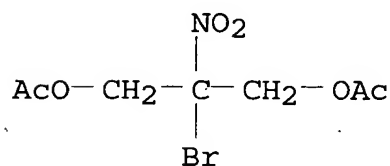
CN 1,3-Propanediol, 2-bromo-2-nitro-, diacetate (ester) (9CI) (CA
INDEX NAME)



RN 259855-20-4 HCA
 CN 1H-Pyrrole-2,5-dione, mixt. with 2-bromo-2-nitro-1,3-propanediyl diacetate (9CI) (CA INDEX NAME)

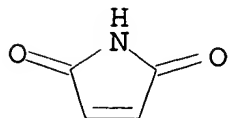
CM 1

CRN 34564-38-0
 CMF C7 H10 Br N O6



CM 2

CRN 541-59-3
 CMF C4 H3 N O2



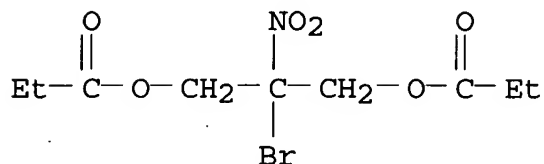
IC ICM A01N037-32
 ICS A01N031-02; A01N033-18; A01N035-04; A01N035-10; A01N037-34;
 A01N043-26; A01N043-80; A01N047-48
 CC 5-2 (Agrochemical Bioregulators)
 Section cross-reference(s): 39, 43, 61
 ST synergistic industrial **bactericide** maleimide mixt
 IT Water purification
 (disinfection; microbicidal mixts. contg.
 maleimides and method for **disinfecting** papermaking
 white water and latex)
 IT **Antibacterial** agents
 (industrial, synergistic; microbicidal mixts. contg.
 maleimides and method for **disinfecting** papermaking
 white water and latex)
 IT Latex
 Paper
Sterilization and Disinfection
 (microbicidal mixts. contg. maleimides and method for
disinfecting papermaking white water and latex)

- IT Aldehydes, biological studies
Oximes
(mixts. with maleimides; **microbicidal** mixts. contg. maleimides and method for **disinfecting** papermaking white water and latex)
- IT 50-00-0D, Formaldehyde, addn. products with glycols, mixts. with maleimides, biological studies 52-51-7D, 2-Bromo-2-nitro-1,3-propanediol, mixts. with maleimides 111-30-8D, Glutaraldehyde, mixts. with maleimides 541-59-3D, Maleimide, derivs., mixts. contg. 698-16-8D, .alpha.-Chlorobenzaldoxime, mixts. with maleimides 1003-07-2D, Isothiazolinone, derivs., mixts. with maleimides 1192-52-5D, 4,5-Dichloro-1,2-dithiol-3-one, mixts. with maleimides 2038-44-0D, Dichloroglyoxime, mixts. with maleimides 2634-33-5D, 1,2-Benzisothiazolin-3-one, mixts. with maleimides 2682-20-4D, mixts. with maleimides 4732-58-5D, Chloroglyoxime, mixts. with maleimides 6317-18-6D, Methylene bis(thiocyanate), mixts. with maleimides 10222-01-2D, 2,2-Dibromo-3-nitrilopropionamide, mixts. with maleimides 26172-55-4D, 5-Chloro-2-methyl-4-isothiazolin-3-one, mixts. with maleimides 26530-20-1D, 2-n-Octyl-4-isothiazolin-3-one, mixts. with maleimides **34564-38-0D**, mixts. with maleimides 64359-81-5D, 4,5-Dichloro-2-n-octyl-4-isothiazolin-3-one, mixts. with maleimides 69094-18-4D, 2,2-Dibromo-2-nitroethanol, mixts. with maleimides
- | | | | | |
|--------------------|-------------|-------------|-------------|-------------|
| 135785-27-2 | 135785-30-7 | 135785-33-0 | 259854-88-1 | 259854-89-2 |
| 259854-90-5 | 259854-91-6 | 259854-92-7 | 259854-93-8 | 259854-94-9 |
| 259854-95-0 | 259854-96-1 | 259854-97-2 | 259854-98-3 | 259854-99-4 |
| 259855-00-0 | 259855-01-1 | 259855-02-2 | 259855-03-3 | 259855-04-4 |
| 259855-05-5 | 259855-06-6 | 259855-07-7 | 259855-08-8 | 259855-09-9 |
| 259855-10-2 | 259855-11-3 | 259855-12-4 | 259855-13-5 | 259855-14-6 |
| 259855-15-7 | 259855-16-8 | 259855-17-9 | 259855-18-0 | 259855-19-1 |
| 259855-20-4 | 259855-21-5 | | | |
- (**microbicidal** mixts. contg. maleimides and method for **disinfecting** papermaking white water and latex)
- L32 ANSWER 8 OF 52 HCA COPYRIGHT 2005 ACS on STN
- 132:148024 Manufacture of industrial synergistic **microbicides**.
Inui, Keiichiro (Shinto Fine K. K., Japan). Jpn. Kokai Tokkyo Koho JP 2000053502 A2 **20000222**, 11 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1998-239519 19980810.
- AB Compd. A which is $R_1CO_2CH_2C(NO_2)(Br)CH_2OC(:O)R_2$ where R_1 = alkyl or allyl ; R_2 = $C \geq 2$ alkyl or allyl, with nitrobrominemethyl compd., is combined with Compd. B consisting of dibromocyanoacetamide, methylenebis(thiocyanate), 4,5-dichloro-1,2-dithiol-3-one, 5-chloro-2-methyl-4-isothiazolin-3-one, 4,5-dichloro-2-octyl-4-isothiazolin-3-one, or bis(bromoacetoxymethyl)-butene, as a synergistic **microbicide** for paint, adhesive, machine oil, and paper industries.
- IT 53607-71-9 55490-05-6 258266-32-9

(industrial synergistic **microbicides** contg.)

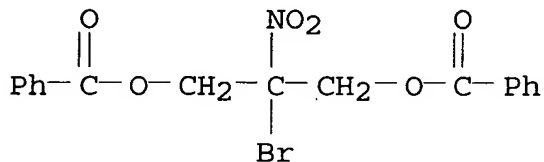
RN 53607-71-9 HCA

CN 1,3-Propanediol, 2-bromo-2-nitro-, dipropanoate (ester) (9CI) (CA INDEX NAME)



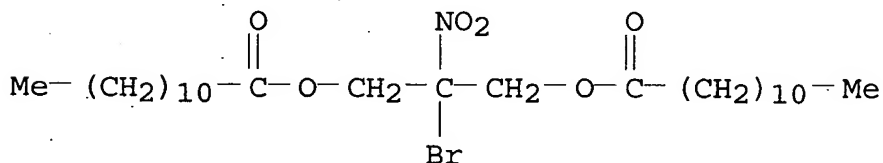
RN 55490-05-6 HCA

CN 1,3-Propanediol, 2-bromo-2-nitro-, dibenzoate (ester) (9CI) (CA INDEX NAME)



RN 258266-32-9 HCA

CN Dodecanoic acid, 2-bromo-2-nitro-1,3-propanediyl ester (9CI) (CA INDEX NAME)



IC ICM A01N037-12

ICS A01N035-02; A01N037-02; A01N037-18; A01N043-80; A01N047-48

CC 5-2 (Agrochemical Bioregulators)

ST nitrobrinmethy deriv synergistic industrial **microbicide**IT **Antimicrobial** agents(industrial synergistic **microbicides** contg.)

IT 1192-52-5, 4,5-Dichloro-1,2-dithiol-3-one 6317-18-6,

Methylenebisthiocyanate 10222-01-2, Dibromocyanoacetamide

26172-55-4, 5-Chloro-2-methyl-4-isothiazolin-3-one

53607-71-9 55490-05-6 64359-81-5 78790-18-8

258266-32-9

(industrial synergistic **microbicides** contg.)

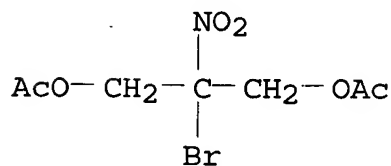
132:133608 Synergistic industrial **microbicidal** compositions containing 2,2-dibromo-2-nitroacetamide and control of microorganisms. Morita, Masahiro; Isogai, Katsuhisa (K. I. Kasei K. K., Japan). Jpn. Kokai Tokkyo Koho JP 2000044406 A2 20000215, 27 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1998-211133 19980727.

AB The compns., which control **bacteria**, yeast, **fungi**, algae, etc., in industrial water system, paper coatings, polymer emulsions, water-thinned paints, adhesives, leathers, water system for their manuf., etc., contain O₂NCBr₂CONH₂ (I) and .gtoreq.1 selected from 6 isothiazolone derivs., .gtoreq.1 selected from 7 nitro alcs., .gtoreq.1 selected from 7 org. Br compds., .gtoreq.1 selected from 3 org. S compds., .gtoreq.1 selected from 3 isophthalonitrile derivs., .gtoreq.1 selected from 3 aldehydes, or .gtoreq.1 selected from 3 quaternary ammonium salts. Microorganisms are controlled by simultaneously or sep. adding I and another component(s) to water systems. A compn. contg. I (50 ppm) 12.5, Kathon WT (10.4 ppm, a mixt. of 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-4-isothiazolin-3-one) 18.5, and diethylene glycol 69.0% was added to a starch slurry contg. Pseudomonas, Aeromonas, and Alcaligenes and the slurry was incubated ay 30-35.degree. for 21 days. **Bacterial** count was 1.0 .times. 10² and odor was not detected, vs. 5.8 .times. 10⁵ and 6.4 .times. 10⁵ for individual addn. of Kathon WT (15.7 ppm) and I (80 ppm), resp.

IT 34564-38-0 71078-63-2 80658-59-9
(mixts. contg.; synergistic industrial **microbicidal** compns. contg. dibromonitroacetamide for water systems)

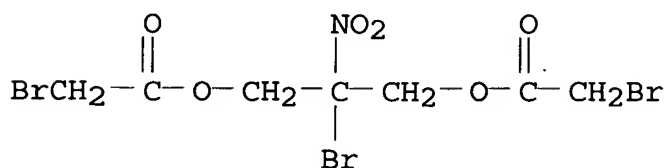
RN 34564-38-0 HCA

CN 1,3-Propanediol, 2-bromo-2-nitro-, diacetate (ester) (9CI) (CA INDEX NAME)

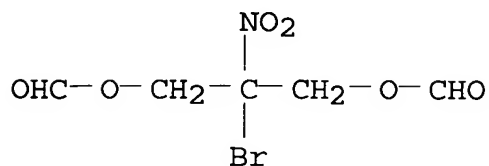


RN 71078-63-2 HCA

CN Acetic acid, bromo-, 2-bromo-2-nitro-1,3-propanediyl ester (9CI)
(CA INDEX NAME)



RN 80658-59-9 HCA
 CN 1,3-Propanediol, 2-bromo-2-nitro-, diformate (ester) (9CI) (CA INDEX NAME)

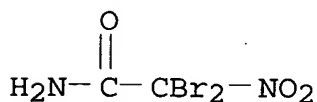


IT 257277-94-4 257277-95-5
 (synergistic industrial **microbicidal** compns. contg.
 dibromonitroacetamide for water systems)

RN 257277-94-4 HCA
 CN Acetamide, 2,2-dibromo-2-nitro-, mixt. with 2-bromo-2-nitro-1,3-propanediyl diacetate (9CI) (CA INDEX NAME)

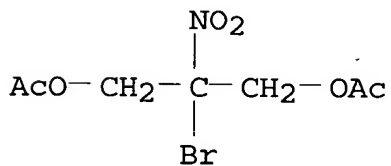
CM 1

CRN 116920-61-7
 CMF C2 H2 Br2 N2 O3



CM 2

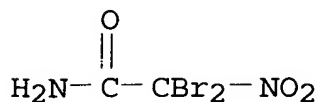
CRN 34564-38-0
 CMF C7 H10 Br N O6



RN 257277-95-5 HCA
 CN Acetic acid, bromo-, 2-bromo-2-nitro-1,3-propanediyl ester, mixt. with 2,2-dibromo-2-nitroacetamide (9CI) (CA INDEX NAME)

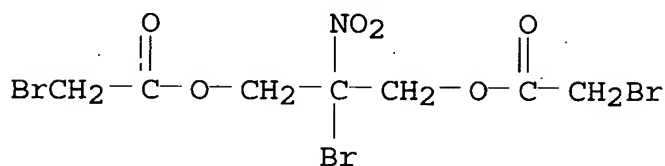
CM 1

CRN 116920-61-7
 CMF C2 H2 Br2 N2 O3



CM 2

CRN 71078-63-2
 CMF C7 H8 Br3 N O6



- IC ICM A01N037-18
 ICS A01N037-18; A01N043-80
- CC 5-2 (Agrochemical Bioregulators)
 Section cross-reference(s): 61
- ST industrial synergistic **microbicide** bromonitroacetamide
 water system; nitrobromoacetamide synergistic industrial
microbicide; isothiazolone bromonitroacetamide synergistic
 industrial **microbicide**; nitro alc bromonitroacetamide
 synergistic industrial **microbicide**; organobromine
 bromonitroacetamide synergistic industrial **microbicide**;
 organosulfur bromonitroacetamide synergistic industrial
microbicide; isophthalonitrile bromonitroacetamide
 synergistic industrial **microbicide**; aldehyde
 bromonitroacetamide synergistic industrial **microbicide**;
 quaternary ammonium salt bromonitroacetamide synergistic industrial
microbicide
- IT Quaternary ammonium compounds, biological studies
 (alkylbenzyl dimethyl, chlorides, mixts. contg.; synergistic
 industrial **microbicidal** compns. contg.
 dibromonitroacetamide for water systems)
- IT **Antibacterial agents**
Fungicides
 (industrial, synergistic; synergistic industrial
microbicidal compns. contg. dibromonitroacetamide for
 water systems)
- IT **Biocides**
 (slimicides; synergistic industrial **microbicidal**

- compns. contg. dibromonitroacetamide for water systems)
- IT **Antimicrobial agents**
(synergistic industrial **microbicidal** compns. contg. dibromonitroacetamide for water systems)
- IT Quaternary ammonium compounds, biological studies
(synergistic industrial **microbicidal** compns. contg. dibromonitroacetamide for water systems)
- IT Algicides
(synergistic; synergistic industrial **microbicidal** compns. contg. dibromonitroacetamide for water systems)
- IT 69094-18-4, Dibnirol A 75
(Dibhirol A 75, mixts. contg.; synergistic industrial **microbicidal** compns. contg. dibromonitroacetamide for water systems)
- IT 111-30-8, 1,5-Pentanedial
(Piror 850, mixts. contg.; synergistic industrial **microbicidal** compns. contg. dibromonitroacetamide for water systems)
- IT 3737-41-5, 3,3,4,4-Tetrachlorotetrahydrothiophene-1,1-dioxide
(Slacurb, mixts. contg.; synergistic industrial **microbicidal** compns. contg. dibromonitroacetamide for water systems)
- IT 50-00-0, Formaldehyde, biological studies 52-51-7,
2-Bromo-2-nitropropane-1,3-diol 643-79-8, o-Phthalaldehyde
1192-52-5, 4,5-Dichloro-1,2-dithiol-3-one 1897-45-6,
2,4,5,6-Tetrachloroisophthalonitrile 1897-50-3,
5-Chloro-2,4,6-trifluoroisophthalonitrile 2377-81-3,
2,4,5,6-Tetrafluoroisophthalonitrile 2634-33-5,
1,2-Benzisothiazolin-3-one 2682-20-4, 2-Methyl-4-isothiazolin-3-one
3785-34-0, 1,2-Bis(bromoacetoxy)ethane 6317-18-6, Methylene
bisthiocyanate 7173-51-5, Bardac 2280 10222-01-2,
2,2-Dibromo-3-nitrilopropionamide 20679-58-7, 1,4-Bis(bromoacetoxy)-2-butene
26172-55-4, 5-Chloro-2-methyl-4-isothiazolin-3-one 26530-20-1,
2-n-Octyl-4-isothiazolin-3-one 30007-47-7, 5-Bromo-5-nitro-1,3-dioxane 34564-38-0
37102-72-0, 1,2-Bis(bromoacetoxy)propane 53607-26-4,
2-Bromo-2-nitrobutane-1,3-diol 53607-31-1, 1,1-Dibromo-1-nitro-2-propanol
64359-81-5, 4,5-Dichloro-2-n-octyl-4-isothiazolin-3-one 69094-16-2,
3-Bromo-3-nitropentane-2,4-diol 71078-63-2 80658-59-9 82633-79-2,
2-Methyl-4,5-trimethylene-4-isothiazolin-3-one 107879-22-1 116920-61-7,
2,2-Dibromo-2-nitroacetamide 130771-27-6, 3,3-Dibromo-3-nitro-1-propanol
(mixts. contg.; synergistic industrial **microbicidal** compns. contg. dibromonitroacetamide for water systems)
- IT 257277-87-5 257277-88-6 257277-89-7 257277-90-0 257277-91-1
257277-92-2 257277-93-3 257277-94-4 257277-95-5
257277-96-6 257282-13-6, 2,2-Dibromo-2-nitroacetamide-XBINX mixt.
257282-14-7, BNPK-2,2-dibromo-2-nitroacetamide mixt. 257282-15-8,

Dibnirol A 75-2,2-dibromo-2-nitroacetamide mixt. 257282-16-9, B
 14-2,2-Dibromo-2-nitroacetamide mixt. 257282-17-0,
 BBAE-2,2-dibromo-2-nitroacetamide mixt. 257282-18-1,
 2,2-Dibromo-2-nitroacetamide-MBT mixt. 257282-19-2,
 2,2-Dibromo-2-nitroacetamide-Slacurb mixt. 257282-20-5,
 2,2-Dibromo-2-nitroacetamide-SDB 028 mixt. 257282-21-6,
 2,2-Dibromo-2-nitroacetamide-SDB 018 mixt. 257282-22-7,
 2,2-Dibromo-2-nitroacetamide-OP 100S mixt. 257282-23-8,
 2,2-Dibromo-2-nitroacetamide-Piror 850 mixt. 257282-24-9,
 2,2-Dibromo-2-nitroacetamide-Bardac 2280 mixt. 257282-25-0, Cation
 G 50-2,2-dibromo-2-nitroacetamide mixt.
 (synergistic industrial **microbicidal** compns. contg.
 dibromonitroacetamide for water systems)

L32 ANSWER 10 OF 52 HCA COPYRIGHT 2005 ACS on STN

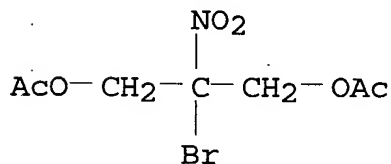
131:84328 **Bactericide** composition.. Onishi, Toshimasa;
 Morita, Takayuki; Yamamoto, Yoshi (Nagase Kasei Kogyo K. K., Japan).
 Jpn. Kokai Tokkyo Koho JP 11189508 A2 19990713 Heisei, 8
 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1997-357954
 19971225.

AB Industrial **bactericides** are prepd. from isothiazolones,
 isothiazolone complexes, bromonitro compds., and bromocyano compds.
 in water, water-org. solvent mixt., or org. solvent. The industrial
bactericides also contain urea, are safe, and have good
 shelf life.

IT 34564-38-0
 (bactericide compn.)

RN 34564-38-0 HCA

CN 1,3-Propanediol, 2-bromo-2-nitro-, diacetate (ester) (9CI) (CA
 INDEX NAME)



IC ICM A01N043-80

ICS A01N033-18; A01N033-20; A01N037-34; A01N047-28; A01N025-22

CC 5-2 (Agrochemical Bioregulators)

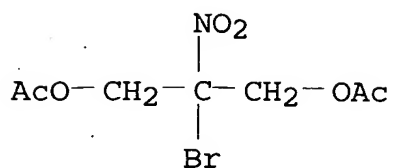
ST industrial **bactericide** shelf life urea

IT Polyoxyalkylenes, uses
 (bactericide compn.)

IT **Antibacterial** agents
 (industrial; **bactericide** compn.)

IT Solvents
 (org.; **bactericide** compn.)

- IT 52-51-7, 2-Bromo-2-nitro-1,3-propanediol 464-10-8,
Tribromonitromethane 10222-01-2 30007-47-7, 5-Bromo-5-nitro-1,3-
dioxane 34564-38-0 35691-65-7, 1,2-Dibromo-2,4-
dicyanobutane 53607-31-1, 1,1-Dibromo-1-nitro-2-propanol
55965-84-9 69094-18-4, 2,2-Dibromo-2-nitro-ethanol
(bactericide compn.)
- IT 57-13-6, Urea, biological studies
(bactericide compn.)
- IT 57-55-6, 1,2-Propanediol, uses 109-86-4, Ethylene glycol
monomethyl ether 110-63-4, 1,4-Butanediol, uses 111-29-5,
1,5-Pentane-diol 111-46-6, uses 111-77-3, Diethyleneglycol
monomethyl ether 7732-18-5, Water, uses 24800-44-0, Tripropylene
glycol 25265-71-8, Dipropylene glycol 25322-68-3 25498-49-1,
Tripropylene glycol monomethyl ether
(bactericide compn.)
- L32 ANSWER 11 OF 52 HCA COPYRIGHT 2005 ACS on STN
130:263535 Industrial **microbicides** containing
tetrakis(hydroxymethyl)phosphonium salts and other
microbicides. Tsuji, Katsuji; Tanaka, Yuko (Katayama
Chemical, Inc., Japan). Jpn. Kokai Tokkyo Koho JP 11071213 A2
19990316 Heisei, 12 pp. (Japanese). CODEN: JKXXAF.
APPLICATION: JP 1997-232715 19970828.
- AB The **microbicides**, useful for water for paper making,
industrial cooling water, starch slurry, processing oils, paints,
etc., contain (1) [(HOCH₂)₄P⁺]ⁿM⁻ (n = valency of M; M = SO₄²⁻;
PO₄³⁻, NO₃⁻, halo, C1-7 org. carboxylic acid anion) and (2)
.gtoreq.1 selected from nitrobromo compds., cyanobromo compds.,
haloacetate esters, glutaraldehyde, methylene bis(thiocyanate),
4,5-dichloro-1,2-dithiol-3-one, haloglyoximes, and isothiazolones as
active ingredients. Addn. of [(HOCH₂)₄P⁺]₂ SO₄²⁻ and Bronopol
(2-bromo-2-nitro-1,3-propanediol) to a com. cutting oil contaminated
with 8.9 .times. 10⁶ CFU/mL decreased the cell no. to 1.0 .times.
10³ after 24 h.
- IT 222018-90-8 222019-10-5
(industrial **microbicides** contg.
tetrakis(hydroxymethyl)phosphonium salts and other
microbicides, e.g. halo compds. and glutaraldehyde and
isothiazolones)
- RN 222018-90-8 HCA
CN Phosphonium, tetrakis(hydroxymethyl)-, sulfate (1:1) (salt), mixt.
with 2-bromo-2-nitro-1,3-propanediyl diacetate (9CI) (CA INDEX
NAME)
- CM 1
- CRN 34564-38-0
CMF C7 H10 Br N O6



CM 2

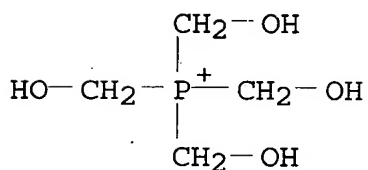
CRN 76995-82-9

CMF C4 H12 O4 P . H O4 S

CM 3

CRN 24655-84-3

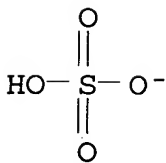
CMF C4 H12 O4 P



CM 4

CRN 14996-02-2

CMF . H O4 S



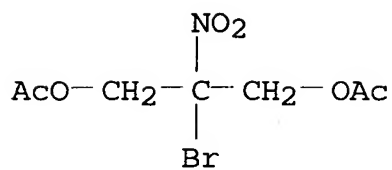
RN 222019-10-5 HCA

CN Phosphonium, tetrakis(hydroxymethyl)-, sulfate (1:1) (salt), mixt.
with 2-bromo-2-nitro-1,3-propanediyl diacetate and methylene
dithiocyanate (9CI) (CA INDEX NAME)

CM 1

CRN 34564-38-0

CMF C7 H10 Br N O6



CM 2

CRN 6317-18-6

CMF C3 H2 N2 S2



CM 3

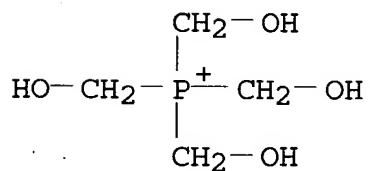
CRN 76995-82-9

CMF C4 H12 O4 P . H O4 S

CM 4

CRN 24655-84-3

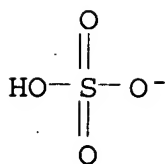
CMF C4 H12 O4 P



CM 5

CRN 14996-02-2

CMF H O4 S



IC ICM A01N057-20
ICS C02F001-50; A01N057-20; A01N033-18; A01N035-02; A01N043-80;
A01N047-48

CC 5-2 (Agrochemical Bioregulators)
Section cross-reference(s): 43, 51, 61

ST industrial **microbicide** hydroxymethylphosphonium sulfate
nitrobromo compd; phosphonium tetrakis(hydroxymethyl) glutaraldehyde
industrial **microbicide**; **bactericide** industrial
hydroxymethylphosphonium sulfate haloglyoxime

IT Lubricating oils
(cutting oils; industrial **microbicides** contg.
tetrakis(hydroxymethyl)phosphonium salts and other
microbicides, e.g. halo compds. and glutaraldehyde and
isothiazolones)

IT **Antimicrobial** agents
Industrial process waters
(industrial **microbicides** contg.
tetrakis(hydroxymethyl)phosphonium salts and other
microbicides, e.g. halo compds. and glutaraldehyde and
isothiazolones)

IT **Antibacterial** agents
(industrial; industrial **microbicides** contg.
tetrakis(hydroxymethyl)phosphonium salts and other
microbicides, e.g. halo compds. and glutaraldehyde and
isothiazolones)

IT Paper
(white water; industrial **microbicides** contg.
tetrakis(hydroxymethyl)phosphonium salts and other
microbicides, e.g. halo compds. and glutaraldehyde and
isothiazolones)

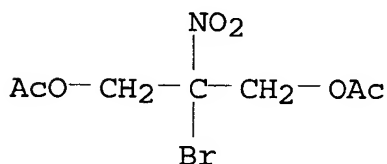
IT 222018-78-2
(industrial **microbicides** contg.
tetrakis(hydroxymethyl)phosphonium salts and other
microbicides, e.g. halo compds. and glutaraldehyde and
isothiazolone)

IT 222018-80-6 222018-82-8 222018-84-0 222018-86-2 222018-88-4
222018-90-8 222018-92-0 222018-94-2 222018-96-4
222018-98-6 222019-00-3 222019-02-5 222019-04-7 222019-06-9
222019-08-1 222019-10-5 222019-12-7 222019-14-9
(industrial **microbicides** contg.
tetrakis(hydroxymethyl)phosphonium salts and other
microbicides, e.g. halo compds. and glutaraldehyde and
isothiazolones)

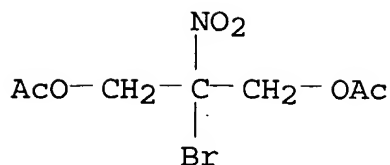
IT 9005-25-8D, Starch, oxidized, slurry, miscellaneous
(industrial **microbicides** contg.
tetrakis(hydroxymethyl)phosphonium salts and other
microbicides, e.g. halo compds. and glutaraldehyde and
isothiazolones)

L32 ANSWER 12 OF 52 HCA COPYRIGHT 2005 ACS on STN

- 129:13482 Synergistic industrial **microbicidal** and **microbiostatic** agents, and method of **disinfection** using them. Tsuji, Katsuji (Katayama Chemical, Inc., Japan). Jpn. Kokai Tokkyo Koho JP 10109907 A2 19980428 Heisei, 17 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1996-264646 19961004.
- AB The title agents, useful in slime control of white water, cooling water, latexes, etc., contain (a) .alpha.-chlorobenzaldoxime (I), (b) 2,2-dibromo-3-nitrilopropionamide (II), 1,4-bis(bromoacetoxy)-2-butene, 1,2-bis(bromoacetoxy)ethane, 1,2-bis(bromoacetoxy)propane, 1,2,3-tris(bromoacetoxy)propane, 2-bromo-2-nitro-1,3-diacetoxypropane, and/or 2,2-dibromo-2-nitroethanol, and (c) methylene bithiocyanate (III) as active ingredients. The agents are added to industrial water systems simultaneously or sep. at total concns. 0.01-200 mg/L. A compn. contg. I 10, II 20, and III 3 wt.% showed long-lasting **antibacterial** and **antifungal** activity in an adhesive.
- IT 34564-38-0D, mixts. contg. 207741-03-5
(synergistic industrial **microbicides** contg.
.alpha.-chlorobenzaldoxime, aliph. bromides, and methylene bithiocyanate)
- RN 34564-38-0 HCA
- CN 1,3-Propanediol, 2-bromo-2-nitro-, diacetate (ester) (9CI) (CA INDEX NAME)



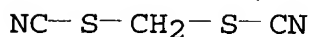
- RN 207741-03-5 HCA
- CN Thiocyanic acid, methylene ester, mixt. with 2-bromo-2-nitro-1,3-propanediyl diacetate and N-hydroxybenzenecarboximidoyl chloride (9CI) (CA INDEX NAME)
- CM 1
- CRN 34564-38-0
- CMF C7 H10 Br N O6



CM 2

CRN 6317-18-6

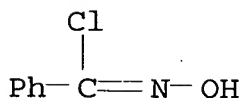
CMF C3 H2 N2 S2



CM 3

CRN 698-16-8

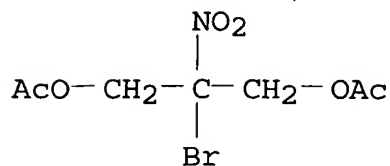
CMF C7 H6 Cl N O



- IC ICM A01N035-10
ICS A01N035-10; A01N031-04; A01N033-18; A01N037-18; A01N047-48
- CC 5-2 (Agrochemical Bioregulators)
Section cross-reference(s): 61
- ST synergistic **microbicide** chlorobenzaldoxime bromide
methylene thiocyanate; water slimicide chlorobenzaldoxime aliph
bromide
- IT Water purification
(**disinfection**; synergistic industrial
microbicides contg. .alpha.-chlorobenzaldoxime, aliph.
bromides, and methylene bithiocyanate)
- IT **Antibacterial agents**
Fungicides
Fungicides
(industrial, synergistic; synergistic industrial
microbicides contg. .alpha.-chlorobenzaldoxime, aliph.
bromides, and methylene bithiocyanate)
- IT Biocides
(slimicides; synergistic industrial **microbicides** contg.
.alpha.-chlorobenzaldoxime, aliph. bromides, and methylene

- bisthiocyanate)
- IT 698-16-8D, .alpha.-Chlorobenzaldoxime, mixts. contg. 3785-34-0D,
1,2-Bis(bromoacetoxy)ethane, mixts. contg. 6317-18-6D, Methylene
bisthiocyanate, mixts. contg. 10222-01-2D, mixts. contg.
20679-58-7D, 1,4-Bis(bromoacetoxy)-2-butene, mixts. contg.
34564-38-0D, mixts. contg. 37102-72-0D,
1,2-Bis(bromoacetoxy)propane, mixts. contg. 64503-08-8D,
1,2,3-Tris(bromoacetoxy)propane, mixts. contg. 69094-18-4D,
2,2-Dibromo-2-nitroethanol, mixts. contg. 207740-97-4
207740-98-5 207740-99-6 207741-01-3 207741-02-4
207741-03-5 207741-05-7
(synergistic industrial **microbicides** contg.
.alpha.-chlorobenzaldoxime, aliph. bromides, and methylene
bisthiocyanate)
- IT 14265-45-3, Sulfite
(synergistic industrial **microbicides** contg.
.alpha.-chlorobenzaldoxime, aliph. bromides, and methylene
bisthiocyanate for water system contg.)
- L32 ANSWER 13 OF 52 HCA COPYRIGHT 2005 ACS on STN
128:254067 Synergistic industrial **antimicrobial** and
bacteriostatic agents and method for control of
microorganism. Tsuji, Katsuji (Katayama Chemical, Inc., Japan).
Jpn. Kokai Tokkyo Koho JP 10067608 A2 **19980310** Heisei, 17
pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1996-222512
19960823.
- AB Title agents contain 2,2-dibromo-3-nitrilopropionamide (I),
bromoacetates, and 2-bromo-2-nitro-1,3-diacetoxyp propane (II) or
2,2-dibromo-2-nitroethanol. The agents are applied to water in
papermaking, cooling water, oils, latexes, starch slurries, etc. at
0.01-200 mg/L in total. I 20, 1,4-bis(bromoacetoxy)-2-butene 25, II
5, and di-Me glutarate 50 wt. parts were mixed to give an
antiseptic, which was added to vinyl acetate adhesive at 30 mg/L to
show good **antimicrobial** effect against **bacteria**,
fungi, and yeast.
- IT **205372-07-2** **205372-08-3** **205372-09-4**
205372-10-7
(synergistic industrial **microbicides** contg.
2,2-dibromo-3-nitrilopropionamide, bromoacetates, and bromo nitro
comps.)
- RN **205372-07-2** HCA
CN Acetic acid, bromo-, 2-butene-1,4-diyl ester, mixt. with
2-bromo-2-nitro-1,3-propanediyl diacetate and 2,2-dibromo-2-
cyanoacetamide (9CI) (CA INDEX NAME)
- CM 1
- CRN 34564-38-0

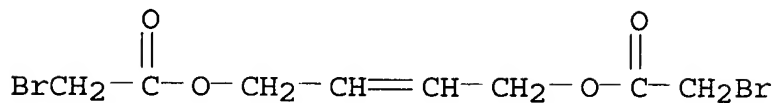
CMF C7 H10 Br N O6



CM 2

CRN 20679-58-7

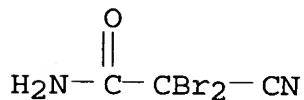
CMF C8 H10 Br2 O4



CM 3

CRN 10222-01-2

CMF C3 H2 Br2 N2 O



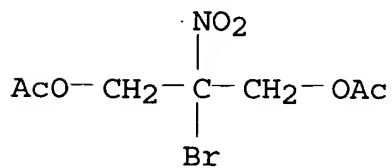
RN 205372-08-3 HCA

CN Acetic acid, bromo-, 1,2-ethanediyl ester, mixt. with
2-bromo-2-nitro-1,3-propanediyl diacetate and 2,2-dibromo-2-
cyanoacetamide (9CI) (CA INDEX NAME)

CM 1

CRN 34564-38-0

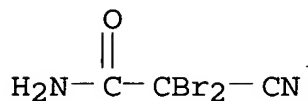
CMF C7 H10 Br N O6



CM 2

CRN 10222-01-2

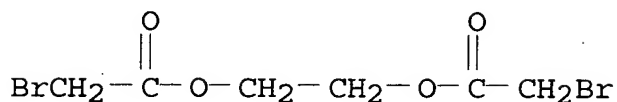
CMF C3 H2 Br2 N2 O



CM 3

CRN 3785-34-0

CMF C6 H8 Br2 O4



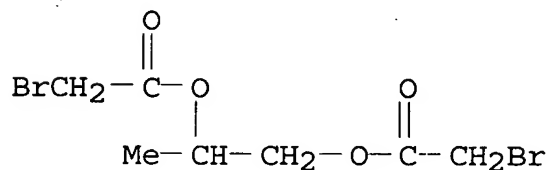
RN 205372-09-4 HCA

CN Acetic acid, bromo-, 1-methyl-1,2-ethanediyl ester, mixt. with
2-bromo-2-nitro-1,3-propanediyl diacetate and 2,2-dibromo-2-
cyanoacetamide (9CI) (CA INDEX NAME)

CM 1

CRN 37102-72-0

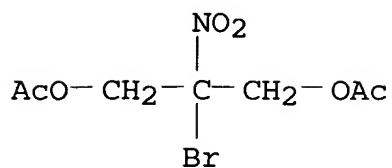
CMF C7 H10 Br2 O4



CM 2

CRN 34564-38-0

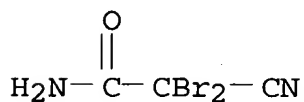
CMF C7 H10 Br N O6



CM 3

CRN 10222-01-2

CMF C3 H2 Br2 N2 O



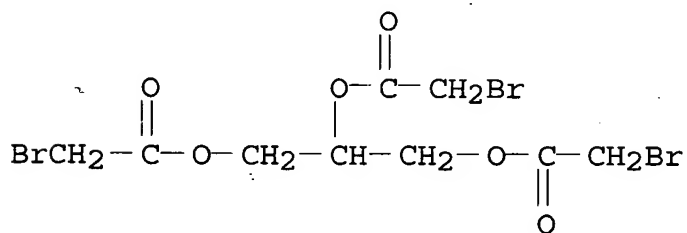
RN 205372-10-7 HCA

CN Acetic acid, bromo-, 1,2,3-propanetriyl ester, mixt. with
2-bromo-2-nitro-1,3-propanediyl diacetate and 2,2-dibromo-2-
cyanoacetamide (9CI) (CA INDEX NAME)

CM 1

CRN 64503-08-8

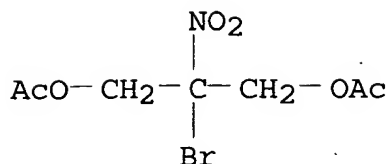
CMF C9 H11 Br3 O6



CM 2

CRN 34564-38-0

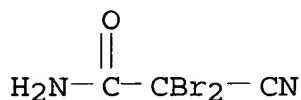
CMF C7 H10 Br N O6



CM 3

CRN 10222-01-2

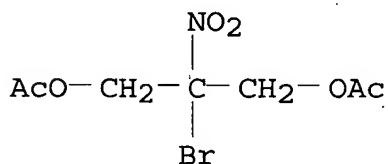
CMF C3 H2 Br2 N2 O



IT 34564-38-0D, mixts. contg. DBNPA and bromoacetates
(synergistic industrial **microbicides** contg. DBNPA,
bromoacetates, and bromo nitro compds.)

RN 34564-38-0 HCA

CN 1,3-Propanediol, 2-bromo-2-nitro-, diacetate (ester) (9CI) (CA
INDEX NAME)



IC ICM A01N037-34

ICS A01N037-34; A01N037-02; A01N033-20

CC 5-2 (Agrochemical Bioregulators)

Section cross-reference(s): 38, 43, 61

ST synergistic industrial **microbicide** DBNPA bromoacetate;
bromonitrodiacetoxyp propane DBNPA synergistic industrial
microbicide; bromonitroethanol DBNPA synergistic industrial
microbicide; adhesive synergistic **microbicide**
DBNPA bromoacetate; papermaking water **microbicide** DBNPA
bromoacetate

IT **Antibacterial agents****Fungicides**

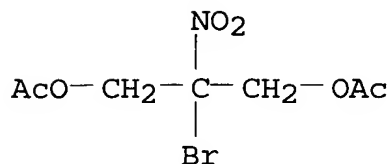
(industrial, synergistic; synergistic industrial
microbicides contg. DBNPA, bromoacetates, and bromo nitro
compds.)

- IT Adhesives
Paper
(synergistic industrial **microbicides** contg.
2,2-dibromo-3-nitrilopropionamide, bromoacetates, and bromo nitro
compds. for)
- IT 205372-07-2 205372-08-3 205372-09-4
205372-10-7 205372-11-8 205372-12-9 205372-13-0
205372-14-1
(synergistic industrial **microbicides** contg.
2,2-dibromo-3-nitrilopropionamide, bromoacetates, and bromo nitro
compds.)
- IT 10222-01-2D, DBNPA, mixts. contg. bromoacetates and bromo nitro
compds. 34564-38-0D, mixts. contg. DBNPA and bromoacetates
69094-18-4D, mixts. contg. DBNPA and bromoacetates
(synergistic industrial **microbicides** contg. DBNPA,
bromoacetates, and bromo nitro compds.)
- L32 ANSWER 14 OF 52 HCA COPYRIGHT 2005 ACS on STN
- 128:150634 **Microbicides** containing glutaraldehyde and halide
microbicides and control of microorganisms in white water
using them. Funatsu, Ryoji; Kurose, Shigeru; Sato, Naoko (Somar
Corp., Japan). Jpn. Kokai Tokkyo Koho JP 10017413 A2
19980120 Heisei, 10 pp. (Japanese). CODEN: JKXXAF.
APPLICATION: JP 1996-166445 19960626.
- AB The **microbicides** comprise (A) glutaraldehyde (I) and (B)
.gtoreq.1 selected from NCCR1XCONHR2 (R1 = H, halo, lower alkyl; R2
= H, lower alkyl; X = halo), 2-bromo-2-nitropropan-1,3-diol,
4,5-dichloro-2-octylisothiazolin-3-one, 4,5-dichloro-1,2-dithiol-3-
one, 2-bromo-2-nitro-1,3-diacetoxyp propane, dichloroglyoxime
diacetate, dichloroglyoxime, .alpha.-chlorobenzaldoxime,
.alpha.-chlorobenzaldoxime acetate, 1,2-bis(bromoacetoxym)ethane,
1,4-bis(bromoacetoxym)-2-butene, 2,4,6-trifluoro-5-
chloroisophthalonitrile, tribromonitromethane, and
5-bromo-5-nitro-1,3-dioxane. Microorganisms in white water are
controlled by sep. or simultaneously adding (A) and (B) at their
total concn. 1-200 ppm. A mixt. of I 50, NCCBr2CONH2 20, and
diethylene glycol monomethyl ether 30 wt.% was added to white water
in a neutral papermaking process over 2 h per day for 7 days to
reduce the no. of **microbial** cells to <102/mL, thus
preventing break due to slime formation.
- IT 144136-61-8
(**microbicides** contg. glutaraldehyde and
halocyanoacetamides or halide **microbicides** for white
water in papermaking)
- RN 144136-61-8 HCA
- CN Pentanedial, mixt. with 2-bromo-2-nitro-1,3-propanediyl diacetate
(9CI) (CA INDEX NAME)

CM 1

CRN 34564-38-0

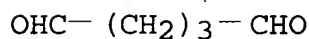
CMF C7 H10 Br N O6



CM 2

CRN 111-30-8

CMF C5 H8 O2



IC ICM A01N035-02

ICS A01N035-10; A01N037-12; A01N037-34; A01N043-26; A01N043-80;
D21F001-66; D21H021-04; A01N035-02; A01N033-18; A01N033-20

CC 5-2 (Agrochemical Bioregulators)

Section cross-reference(s): 43, 61

ST **microbicide** glutaraldehyde halide white water papermaking;
halocyanoacetamide glutaraldehyde slimicide white water papermakingIT **Antibacterial** agents(industrial; **microbicides** contg. glutaraldehyde and
halocyanoacetamides or halide **microbicides** for white
water in papermaking)IT Industrial process waters
Paper(microbicides contg. glutaraldehyde and
halocyanoacetamides or halide **microbicides** for white
water in papermaking)IT 144136-59-4 **144136-61-8** 202718-55-6 202718-56-7

202718-57-8 202718-58-9 202718-59-0 202718-60-3 202718-61-4

202718-62-5 202718-63-6 202718-64-7 202718-66-9

(microbicides contg. glutaraldehyde and
halocyanoacetamides or halide **microbicides** for white
water in papermaking)

IT 202718-65-8

(microbicides contg. glutaraldehyde and
halocyanoacetamides or halide **microbicides** for white
water in papermaking)

L32 ANSWER 15 OF 52 HCA COPYRIGHT 2005 ACS on STN

128:85444 Synergistic industrial **antimicrobial** agents and **sterilization** method. Tsuji, Katsuji (Katayama Chemical, Inc., Japan). Jpn. Kokai Tokkyo Koho JP 09323907 A2 19971216 Heisei, 20 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1996-140331 19960603.

AB The agents contain (A) 2,2-dibromo-3-nitrilopropionamide (I) or 2,2-dibromo-2-nitroethanol, (B) poly(acetoxyalkylene) derivs. contg. Br, and (C) 4,5-dichloro-1,2-dithiol-3-one (II) at a ratio showing synergism. The method is performed by simultaneous or sep. addn. of (A), (B), and (C) to objects, e.g. water for paper making, cooling water, fuel oil sludges, cleaning water, paints, antifouling coatings, latex, starch, etc., at the total concn. 0.01-200 mg/L. A mixt. of I 20, 1,4-bis(bromoacetoxy)-2-butene 30, II 2, and propylene carbonate 48 parts significantly inhibited sliming of a plastic wire soaked in white water extd. from a paper-making process.

IT 201140-46-7 201140-51-4

(synergistic industrial **antimicrobial** agents)

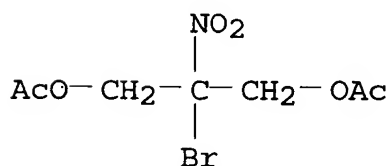
RN 201140-46-7 HCA

CN Acetamide, 2,2-dibromo-2-cyano-, mixt. with 2-bromo-2-nitro-1,3-propanediyl diacetate and 4,5-dichloro-3H-1,2-dithiol-3-one (9CI) (CA INDEX NAME)

CM 1

CRN 34564-38-0

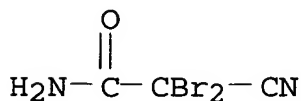
CMF C7 H10 Br N O6



CM 2

CRN 10222-01-2

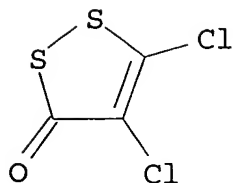
CMF C3 H2 Br2 N2 O



CM 3

CRN 1192-52-5

CMF C3 Cl2 O S2



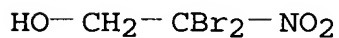
RN 201140-51-4 HCA

CN 3H-1,2-Dithiol-3-one, 4,5-dichloro-, mixt. with 2-bromo-2-nitro-1,3-propanediyl diacetate and 2,2-dibromo-2-nitroethanol (9CI) (CA INDEX NAME)

CM 1

CRN 69094-18-4

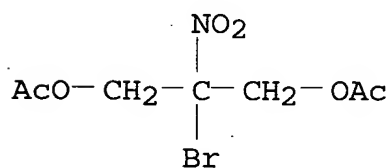
CMF C2 H3 Br2 N O3



CM 2

CRN 34564-38-0

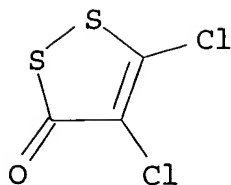
CMF C7 H10 Br N O6



CM 3

CRN 1192-52-5

CMF C3 Cl2 O S2



- IC ICM A01N043-26
ICS A01N043-26; A01N037-02; A01N037-34; A01N031-02
- CC 5-2 (Agrochemical Bioregulators)
Section cross-reference(s): 43, 61
- ST industrial **microbicide** bromonitrilopropionamide
chlorodithiolone bromoacetoxybutene; nitrilopropionamide bromo
industrial synergistic **microbicide**; bromonitroethanol
industrial synergistic **microbicide**; dithiolone chloro
industrial synergistic **microbicide**
- IT **Antibacterial** agents
(industrial, synergistic; synergistic industrial
antimicrobial agents)
- IT Paper
(slimicides for; synergistic industrial **antimicrobial**
agents)
- IT Antifouling agents
Antimicrobial agents
Cooling water
Disinfectants
Sterilization and Disinfection
(synergistic industrial **antimicrobial** agents)
- IT 201140-42-3 201140-43-4 201140-44-5 201140-45-6
201140-46-7 201140-47-8 201140-48-9 201140-49-0
201140-50-3 201140-51-4
(synergistic industrial **antimicrobial** agents)
- L32 ANSWER 16 OF 52 HCA COPYRIGHT 2005 ACS on STN
- 128:1205 Industrial **microbicides** containing
methylenebis(chlorophenol) and control of microorganisms with them.
Shimomoto, Hideaki; Hirashima, Hidenori (Katayama Chemical, Inc.,
Japan). Jpn. Kokai Tokkyo Koho JP 09286703 A2 19971104
Heisei, 10 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP
1996-96888 19960418.
- AB Synergistic industrial **microbicides** contain
2,2'-methylenebis(4-chlorophenol) (I) and carbonium-forming
halogen-contg. **microbicides** chosen from HON:CClCQ:NOH (Q =
Cl, H), 4,5-dichloro-1,2-dithiol-3-one, .alpha.-chlorobenzaldoxime,
2-bromo-2-nitro-1,3-diacetoxypropane, 2,2-dibromo-2-nitroethanol,
and bis(tribromomethyl) sulfone. I-dichloroglyoxime (II) mixt.

(90:10) was applied to white water in papermaking process at 5 mg/L to result in 15-20% adhesion of slime, vs. 100% or 85-90% adhesion, for I or II alone, resp. A **microbicide** was prepd. from I 10, II 1, and diethylene glycol monomethyl ether 89 wt. parts.

IT 198964-34-0

(synergistic industrial **microbicides** contg. methylenebis(chlorophenol) and halogen compds.)

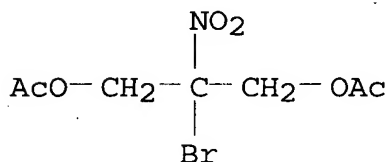
RN 198964-34-0 HCA

CN 1,3-Propanediol, 2-bromo-2-nitro-, diacetate (ester), mixt. with 2,2'-methylenebis[4-chlorophenol] (9CI) (CA INDEX NAME)

CM 1

CRN 34564-38-0

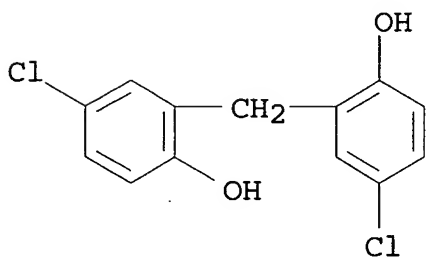
CMF C7 H10 Br N O6



CM 2

CRN 97-23-4

CMF C13 H10 Cl2 O2



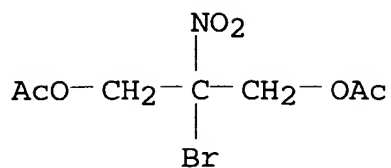
IC ICM A01N029-04

ICS A01N029-04; A01N035-10; A01N035-02; A01N037-52; A01N037-02; A01N037-00; A01N041-10

CC 5-2 (Agrochemical Bioregulators)
Section cross-reference(s): 43, 61

ST industrial synergistic **microbicide**
methylenebis(chlorophenol) chloroglyoxime; papermaking water **microbicide** methylenebis(chlorophenol) chloroglyoxime; slime control papermaking methylenebis(chlorophenol) chloroglyoxime

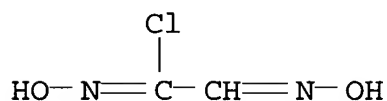
- IT Paper
(in manuf. of; synergistic industrial **microbicides** contg. methylenebis(chlorophenol) and halogen compds.)
- IT **Antibacterial agents**
Fungicides
(industrial, synergistic; synergistic industrial **microbicides** contg. methylenebis(chlorophenol) and halogen compds.)
- IT 97-23-4D, 2,2'-Methylenebis(4-chlorophenol), mixts. contg. halogen-contg. **microbicides** 198964-30-6 198964-31-7
198964-32-8 198964-33-9 198964-34-0 198964-35-1
198964-36-2 198964-37-3
(synergistic industrial **microbicides** contg. methylenebis(chlorophenol) and halogen compds.)
- L32 ANSWER 17 OF 52 HCA COPYRIGHT 2005 ACS on STN
- 127:230621 Industrial synergistic **microbicides** containing dichlorodithiolone and their application method. Tsuji, Katsuji (Katayama Chemical, Inc., Japan). Jpn. Kokai Tokkyo Koho JP 09227304 A2 19970902 Heisei, 29 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1996-33924 19960221.
- AB Microorganisms are controlled by simultaneous or sep. application of (A) 4,5-dichloro-1,2-dithiol-3-one (I), (B) org. Br compds., and (C) oximes at A:B (by wt.) 1:(0.2-50), (A + B):C 1:(0.002-9), and total concn. 0.01-200 mg/L. The **microbicides** are useful for paper manuf., cooling water, heavy oil sludge, metal processing oils, paints, latexes, etc. I 4, 2,2-dibromo-3-nitrilopropionamide 20, monochloroglyoxime 2, diethylene glycol monomethyl ether 25, and diethylene glycol 49 wt. parts were mixed to prep. a **microbicide**, which was added to a vinyl acetate adhesive at 30 mg/L (as active ingredient) to show complete control of Pseudomonas, Alcaligenes, Micrococcus, Geotrichum, and Candida at 30.degree. for 1 mo.
- IT 195322-86-2 195322-87-3 195322-88-4
195322-89-5
(industrial synergistic **microbicides** contg. dichlorodithiolone, Br compds., and oximes)
- RN 195322-86-2 HCA
- CN Ethanimidoyl chloride, N-hydroxy-2-(hydroxyimino)-, mixt. with 2-bromo-2-nitro-1,3-propanediyl diacetate and 4,5-dichloro-3H-1,2-dithiol-3-one (9CI) (CA INDEX NAME)
- CM 1
- CRN 34564-38-0
- CMF C7 H10 Br N O6



CM 2

CRN 4732-58-5

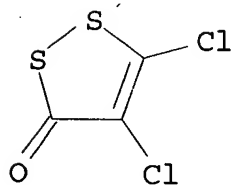
CMF C2 H3 Cl N2 O2



CM 3

CRN 1192-52-5

CMF C3 Cl2 O S2



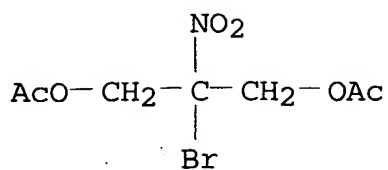
RN 195322-87-3 HCA

CN Ethanediimidoyl dichloride, dihydroxy-, mixt. with
2-bromo-2-nitro-1,3-propanediyl diacetate and 4,5-dichloro-3H-1,2-
dithiol-3-one (9CI) (CA INDEX NAME)

CM 1

CRN 34564-38-0

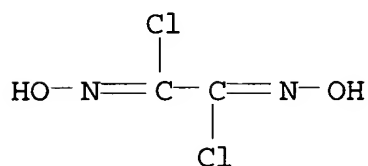
CMF C7 H10 Br N O6



CM 2

CRN 2038-44-0

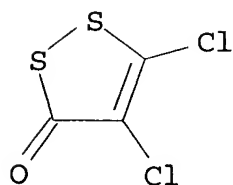
CMF C2 H2 Cl2 N2 O2



CM 3

CRN 1192-52-5

CMF C3 Cl2 O S2



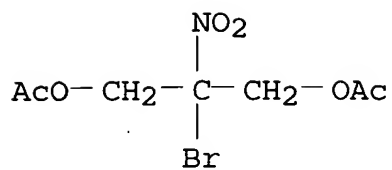
RN 195322-88-4 HCA

CN Ethanediimidoyl dichloride, dihydroxy-, mixt. with
2-bromo-2-nitro-1,3-propanediyl diacetate, 4,5-dichloro-3H-1,2-
dithiol-3-one and N-hydroxy-2-(hydroxyimino)ethanimidoyl chloride
(9CI) (CA INDEX NAME)

CM 1

CRN 34564-38-0

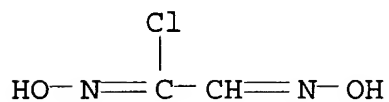
CMF C7 H10 Br N O6



CM 2

CRN 4732-58-5

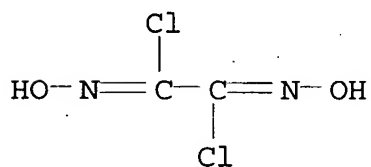
CMF C2 H3 Cl N2 O2



CM 3

CRN 2038-44-0

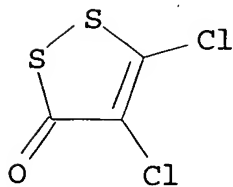
CMF C2 H2 Cl2 N2 O2



CM 4

CRN 1192-52-5

CMF C3 Cl2 O S2



RN 195322-89-5 HCA

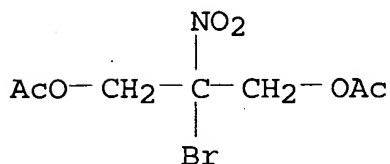
CN Benzenecarboximidoyl chloride, N-hydroxy-, mixt. with

2-bromo-2-nitro-1,3-propanediyl diacetate and 4,5-dichloro-3H-1,2-dithiol-3-one (9CI) (CA INDEX NAME)

CM 1

CRN 34564-38-0

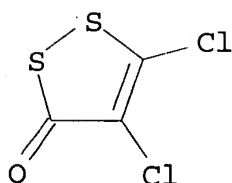
CMF C7 H10 Br N O6



CM 2

CRN 1192-52-5

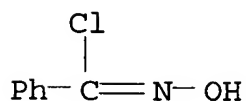
CMF C3 Cl2 O S2



CM 3

CRN 698-16-8

CMF C7 H6 Cl N O



IC ICM A01N029-00

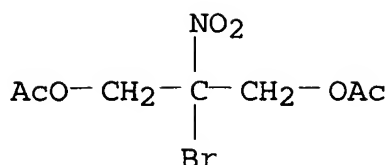
ICS A01N033-00; A01N035-10

CC 5-2 (Agrochemical Bioregulators)

Section cross-reference(s): 38, 43

ST industrial synergistic **microbicide** chlorodithiolone oxime;
bromine chlorodithiolone **microbicide** synergistic
industrial; paper manuf **microbicide** chlorodithiolone
oxime; adhesive **microbicide** chlorodithiolone bromine oxime

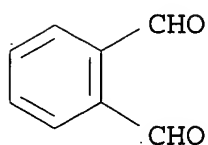
- IT Adhesives
Paper
(industrial synergistic **microbicides** contg.
dichlorodithiolone, Br compds., and oximes)
- IT **Antibacterial agents**
Fungicides
(industrial, synergistic; industrial synergistic
microbicides contg. dichlorodithiolone, Br compds., and
oximes)
- IT Oximes
(mixts. contg. dichlorodithiolone and org. Br compds.; industrial
synergistic **microbicides** contg. dichlorodithiolone, Br
compds., and oximes)
- IT 1192-52-5D, 4,5-Dichloro-1,2-dithiol-3-one, mixts. contg. org. Br
compds. and oximes 195322-56-6 195322-57-7 195322-58-8
195322-59-9 195322-60-2 195322-61-3 195322-62-4 195322-63-5
195322-64-6 195322-65-7 195322-66-8 195322-67-9 195322-68-0
195322-69-1 195322-72-6 195322-74-8 195322-76-0 195322-78-2
195322-80-6 195322-81-7 195322-82-8 195322-83-9 195322-84-0
195322-85-1 195322-86-2 195322-87-3
195322-88-4 195322-89-5
(industrial synergistic **microbicides** contg.
dichlorodithiolone, Br compds., and oximes)
- L32 ANSWER 18 OF 52 HCA COPYRIGHT 2005 ACS on STN
126:182645 Synergistic **microbicides** for industrial uses.
Yagi, Minoru; Kiuchi, Koji; Suzuki, Hiroyuki; Fuwa, Masaaki (Kurita
Water Ind Ltd, Japan). Jpn. Kokai Tokkyo Koho JP 09025205 A2
19970128 Heisei, 12 pp. (Japanese). CODEN: JKXXAF.
APPLICATION: JP 1995-198099 19950711.
- AB Synergistic **microbicides** esp. useful in paper and paint
industries consist of o-phthalaldehyde in combination with known
industrial **microbicide** selected from the group comprising
organonitrogen-sulfur compds., organohalogen compds., organonitrogen
compds., organosulfur compds. and phenol compds. The known compds.
include methylenebisithiocyanate, 2,2-dibromo-3-nitrilopropionamide,
N,4-dihydroxy-.alpha.-oxobenzeneethanimidoyl chloride,
3,3,4,4-tetrachlorotetrahydrothiophene-1,1-dioxide, and dichlorofen.
- IT 187590-78-9
(in synergistic **microbicides** for industrial uses)
- RN 187590-78-9 HCA
- CN 1,2-Benzenedicarboxaldehyde, mixt. with 2-bromo-2-nitro-1,3-
propanediyl diacetate (9CI) (CA INDEX NAME)
- CM 1
- CRN 34564-38-0
- CMF C7 H10 Br N O6



CM 2

CRN 643-79-8

CMF C8 H6 O2



IC ICM A01N035-04
 ICS A01N035-04; A01N031-02; A01N031-08; A01N033-20; A01N035-02;
 A01N035-08; A01N037-02; A01N037-18; A01N037-28; A01N037-34;
 A01N037-52; A01N043-10; A01N043-32; A01N043-80; A01N047-02;
 A01N047-08; A01N047-14; A01N047-48

CC 5-2 (Agrochemical Bioregulators)
 Section cross-reference(s): 42, 43

ST synergistic **microbicide** phthalaldehyde industrial use

IT Cellulose pulp
 Paints
 Sludges
 (synergistic **microbicides** for industrial)

IT **Antibacterial agents**
Fungicides
 (synergistic **microbicides** for industrial uses)

IT 180310-79-6 187590-57-4 187590-58-5 187590-60-9 187590-61-0
 187590-63-2 187590-64-3 187590-66-5 187590-68-7 187590-70-1
 187590-73-4 187590-74-5 187590-75-6 187590-76-7
187590-78-9 187590-80-3 187590-83-6 187590-85-8
 187590-87-0 187590-89-2 187590-91-6 187590-92-7 187590-94-9
 187590-96-1 187590-98-3 187591-00-0 187591-02-2 187591-04-4
 187591-06-6 187591-08-8 187591-10-2 187591-12-4 187591-14-6
 187591-16-8 187591-18-0 187591-20-4 187591-22-6
 (in synergistic **microbicides** for industrial uses)

L32 ANSWER 19 OF 52 HCA COPYRIGHT 2005 ACS on STN

126:3064 Synergistic **antimicrobial** agents for industrial uses.

Tsuji, Katsuji; Tanaka, Juko (Katayama Chemical Works Co, Japan).

Jpn. Kokai Tokkyo Koho JP 08245313 A2 19960924 Heisei, 26
pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1995-45992
19950306.

AB An antimicrobial compn. consists of (1) .gtoreq. 1
halogenated glyoxime, HON:CXC(Y):NOH (X = halo; Y = H, halo), (2)
.gtoreq. 1 substance selected from the group consisting of
2,2-dibromo-3-nitrilopropionamide, 2-bromo-2-nitro-1,3-
diacetoxypropane, 1,2-bis(bromoacetoxy)ethane, 1,2-
bis(bromoacetoxy)propane, 1,2,3-tris(bromoacetoxy)propane,
1,4-bis(bromoacetoxy)-2-butene, and .alpha.-chlorobenzaldoxime, and
(3) methylenebisthiocyanate, 5-chloro-2-methyl-4-isothiazolin-3-one,
or 4,5-dichloro-2-octyl-4-isothiazolin-3-one. The synergistic
compn. controls **microbial** growth in coating materials,
starch and pulp slurry.

IT 183894-76-0 183894-78-2 183894-79-3
183894-89-5 183894-90-8 183894-91-9
183895-07-0 183895-10-5

(in synergistic antimicrobial agents for industrial
uses)

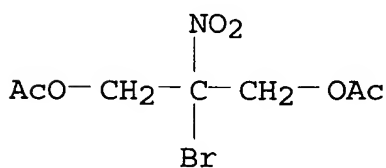
RN 183894-76-0 HCA

CN Thiocyanic acid, methylene ester, mixt. with 2-bromo-2-nitro-1,3-
propanediyl diacetate and dihydroxyethanediimidoyl dichloride (9CI)
(CA INDEX NAME)

CM 1

CRN 34564-38-0

CMF C7 H10 Br N O6



CM 2

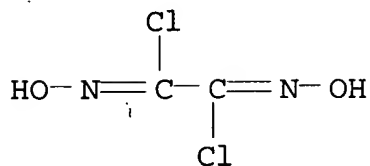
CRN 6317-18-6

CMF C3 H2 N2 S2



CM 3

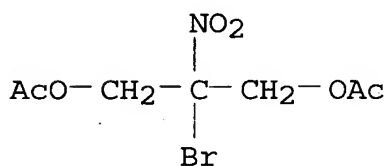
CRN 2038-44-0
CMF C2 H2 Cl2 N2 O2



RN 183894-78-2 HCA
CN Thiocyanic acid, methylene ester, mixt. with 2-bromo-2-nitro-1,3-propanediyl diacetate and N-hydroxy-2-(hydroxyimino)ethanimidoyl chloride (9CI) (CA INDEX NAME)

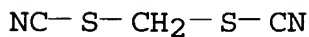
CM 1

CRN 34564-38-0
CMF C7 H10 Br N O6



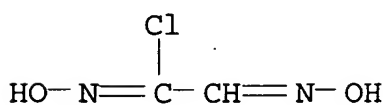
CM 2

CRN 6317-18-6
CMF C3 H2 N2 S2



CM 3

CRN 4732-58-5
CMF C2 H3 Cl N2 O2



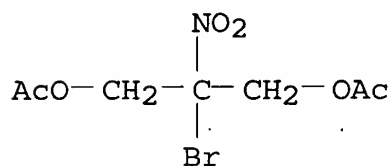
RN 183894-79-3 HCA

CN Thiocyanic acid, methylene ester, mixt. with 2-bromo-2-nitro-1,3-propanediyl diacetate, dihydroxyethanediimidoyl dichloride and N-hydroxy-2-(hydroxyimino)ethanimidoyl chloride (9CI) (CA INDEX NAME)

CM 1

CRN 34564-38-0

CMF C7 H10 Br N O6



CM 2

CRN 6317-18-6

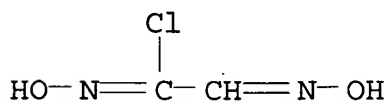
CMF C3 H2 N2 S2



CM 3

CRN 4732-58-5

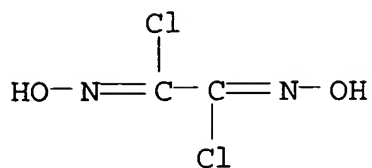
CMF C2 H3 Cl N2 O2



CM 4

CRN 2038-44-0

CMF C2 H2 Cl2 N2 O2



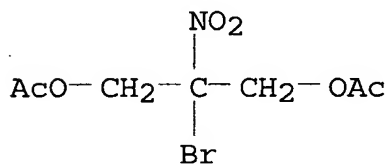
RN 183894-89-5 HCA

CN Ethanediimidoyl dichloride, dihydroxy-, mixt. with
2-bromo-2-nitro-1,3-propanediyl diacetate and 5-chloro-2-methyl-
3(2H)-isothiazolone (9CI) (CA INDEX NAME)

CM 1

CRN 34564-38-0

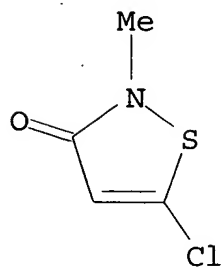
CMF C7 H10 Br N O6



CM 2

CRN 26172-55-4

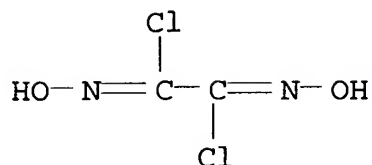
CMF C4 H4 Cl N O S



CM 3

CRN 2038-44-0

CMF C2 H2 Cl2 N2 O2



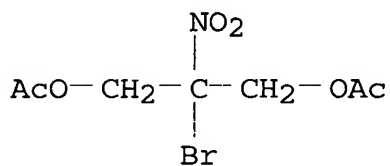
RN 183894-90-8 HCA

CN Ethanimidoyl chloride, N-hydroxy-2-(hydroxyamino)-, mixt. with
2-bromo-2-nitro-1,3-propanediyl diacetate and 5-chloro-2-methyl-
3(2H)-isothiazolone (9CI) (CA INDEX NAME)

CM 1

CRN 34564-38-0

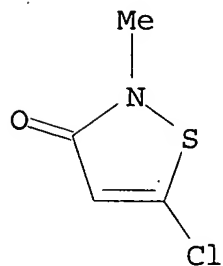
CMF C7 H10 Br N O6



CM 2

CRN 26172-55-4

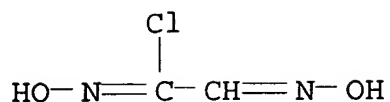
CMF C4 H4 Cl N O S



CM 3

CRN 4732-58-5

CMF C2 H3 Cl N2 O2



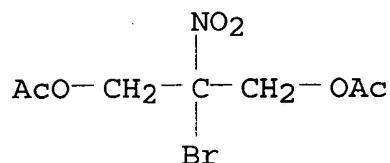
RN 183894-91-9 HCA

CN Ethanediimidoyl dichloride, dihydroxy-, mixt. with
2-bromo-2-nitro-1,3-propanediyl diacetate, 5-chloro-2-methyl-3(2H)-
isothiazolone and N-hydroxy-2-(hydroxyamino)ethanimidoyl chloride
(9CI) (CA INDEX NAME)

CM 1

CRN 34564-38-0

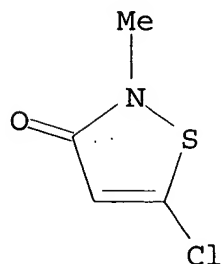
CMF C7 H10 Br N O6



CM 2

CRN 26172-55-4

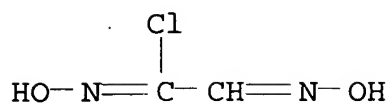
CMF C4 H4 Cl N O S



CM 3

CRN 4732-58-5

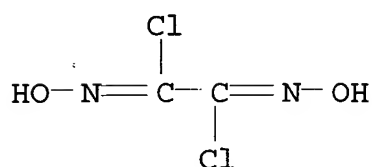
CMF C2 H3 Cl N2 O2



CM 4

CRN 2038-44-0

CMF C2 H2 Cl2 N2 O2



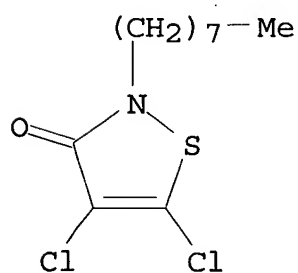
RN 183895-07-0 HCA

CN Ethanediimidoyl dichloride, dihydroxy-, mixt. with
2-bromo-2-nitro-1,3-propanediyl diacetate and 4,5-dichloro-2-octyl-
3(2H)-isothiazolone (9CI) (CA INDEX NAME)

CM 1

CRN 64359-81-5

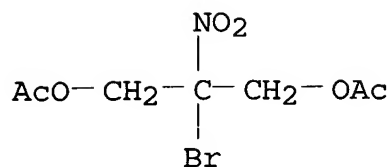
CMF C11 H17 Cl2 N O S



CM 2

CRN 34564-38-0

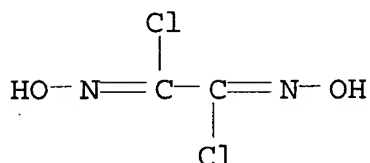
CMF C7 H10 Br N O6



CM 3

CRN 2038-44-0

CMF C2 H2 Cl2 N2 O2



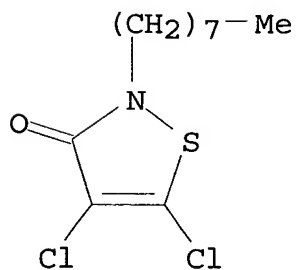
RN 183895-10-5 HCA

CN Ethanimidoyl chloride, N-hydroxy-2-(hydroxyamino)-, mixt. with
2-bromo-2-nitro-1,3-propanediyl diacetate and 4,5-dichloro-2-octyl-
3(2H)-isothiazolone (9CI) (CA INDEX NAME)

CM 1

CRN 64359-81-5

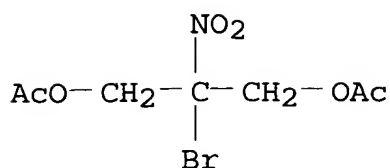
CMF C11 H17 Cl2 N O S



CM 2

CRN 34564-38-0

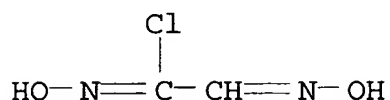
CMF C7 H10 Br N O6



CM 3

CRN 4732-58-5

CMF C2 H3 Cl N2 O2

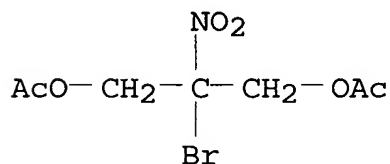


IT 34564-38-0

(in synergistic antimicrobial agents for industrial uses)

RN 34564-38-0 HCA

CN 1,3-Propanediol, 2-bromo-2-nitro-, diacetate (ester) (9CI) (CA INDEX NAME)



IC ICM A01N037-52

ICS A01N035-10; A01N037-02; A01N037-18; A01N043-80; A01N047-48

CC 5-2 (Agrochemical Bioregulators)

Section cross-reference(s): 42, 43, 44

ST synergistic microbicide glyoxime thiocyanate alkane deriv

IT Coating materials

(in synergistic antimicrobial agents for industrial)

IT Slurries

(synergistic antimicrobial agents for industrial)

IT Antibacterial agents

Fungicides

(synergistic antimicrobial agents for industrial uses)

IT 183232-68-0 183894-70-4 183894-72-6 183894-76-0

183894-78-2 183894-79-3 183894-80-6

183894-81-7 183894-82-8 183894-83-9 183894-84-0 183894-85-1

183894-86-2 183894-87-3 183894-88-4 **183894-89-5**
183894-90-8 183894-91-9 183894-92-0
183894-93-1 183894-94-2 183894-95-3 183894-96-4 183894-97-5
183894-98-6 183894-99-7 183895-00-3 183895-01-4 183895-02-5
183895-03-6 183895-04-7 183895-05-8 183895-06-9
183895-07-0 183895-08-1 183895-09-2 **183895-10-5**
183895-11-6 183895-12-7 183895-13-8 183895-14-9

(in synergistic **antimicrobial** agents for industrial uses)

IT 698-16-8 3785-34-0, 1,2-Bis(bromoacetoxy)ethane 6317-18-6,
Methylenebis(thiocyanate) 10222-01-2, 2,2-Dibromo-3-
nitrilopropionamide 20679-58-7, 1,4-Bis(bromoacetoxy)-2-butene
26172-55-4, 5-Chloro-2-methyl-4-isothiazolin-3-one
34564-38-0 37102-72-0, 1,2-Bis(bromoacetoxy)propane
64359-81-5

(in synergistic **antimicrobial** agents for industrial uses)

IT 9005-25-8, Starch, uses
(synergistic **antimicrobial** agents for slurry of industrial)

L32 ANSWER 20 OF 52 HCA COPYRIGHT 2005 ACS on STN

125:240851 Synergistic **bactericides** and **fungicides**
for industries. Tsuji, Katsuji; Tanaka, Juko; Hirashima, Hidenori
(Katayama Chemical Works Co, Japan). Jpn. Kokai Tokkyo Koho JP
08198715 A2 **19960806** Heisei, 11 pp. (Japanese). CODEN:
JKXXAF. APPLICATION: JP 1995-6051 19950118.

AB A synergistic **bactericide** or **fungicide** useful in
a variety of industries such as industries working with pulp, paint,
and starch slurry, consists of 2,2-dibromo-3-nitrilopropionamide,
polyacetoxyalkylene deriv. selected from 2-bromo-2-nitro-1,3-
diacetoxypropane, 1,2-bis(bromoacetoxy)ethane, 1,2-
bis(bromoacetoxy)propane, 1,2,3-tris(bromoacetoxy)propane, and
1,4-bis(bromoacetoxy)-2-butene, and methylenebis(thiocyanate).

IT **182062-73-3**
(synergistic **bactericides** and **fungicides** for industries)

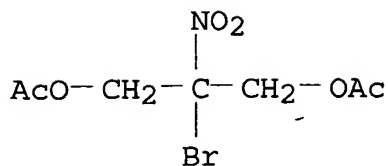
RN 182062-73-3 HCA

CN Thiocyanic acid, methylene ester, mixt. with 2-bromo-2-nitro-1,3-
propanediyl diacetate and 2,2-dibromo-2-cyanoacetamide (9CI) (CA
INDEX NAME)

CM 1

CRN 34564-38-0

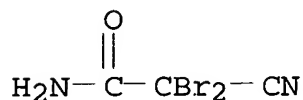
CMF C7 H10 Br N O6



CM 2

CRN 10222-01-2

CMF C3 H2 Br2 N2 O



CM 3

CRN 6317-18-6

CMF C3 H2 N2 S2



IC ICM A01N047-46

ICI A01N047-46, A01N037-34; A01N047-46, A01N035-02

CC 5-2 (Agrochemical Bioregulators)

ST synergistic bactericide fungicide
isothiazolinone polyacetoxymethylene propionamide

IT Coating materials

Pulp, cellulose

Wastewater

(bactericides and fungicides for industries
of)

IT Bactericides, Disinfectants, and Antiseptics

Fungicides and Fungistats

(synergistic, bactericides and fungicides for
industries)

IT 182062-73-3 182062-74-4 182062-76-6 182062-77-7

182062-78-8

(synergistic bactericides and fungicides for
industries)

L32 ANSWER 21 OF 52 HCA COPYRIGHT 2005 ACS on STN

125:240850 Synergistic bactericides and fungicides

for industries. Tsuji, Katsuji; Tanaka, Juko; Hirashima, Hidenori (Katayama Chemical Works Co, Japan). Jpn. Kokai Tokkyo Koho JP 08198714 A2 19960806 Heisei, 12 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1995-6052 19950118.

AB A synergistic bactericide or fungicide useful in a variety of industries such as industries working with pulp, paint, and starch slurry, consists of 2,2-dibromo-3-nitrilopropionamide, polyacetoxymethylene deriv. selected from 2-bromo-2-nitro-1,3-diacetoxymethane, 1,2-bis(bromoacetoxymethyl)ethane, 1,2-bis(bromoacetoxymethyl)propane, 1,2,3-tris(bromoacetoxymethyl)propane, and 1,4-bis(bromoacetoxymethyl)-2-butene, and 3-isothiazolone compds. selected from 5-chloro-2-methyl-4-isothiazolin-3-one and 4,5-dichloro-2-n-octyl-4-isothiazolin-3-one.

IT 182062-06-2 182062-08-4
(synergistic bactericides and fungicides for industries)

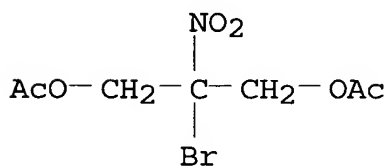
RN 182062-06-2 HCA

CN Acetamide, 2,2-dibromo-2-cyano-, mixt. with 2-bromo-2-nitro-1,3-propanediyl diacetate and 5-chloro-2-methyl-3(2H)-isothiazolone (9CI) (CA INDEX NAME)

CM 1

CRN 34564-38-0

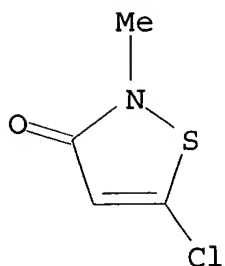
CMF C7 H10 Br N O6



CM 2

CRN 26172-55-4

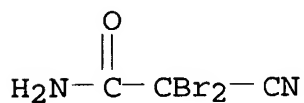
CMF C4 H4 Cl N O S



CM 3

CRN 10222-01-2

CMF C3 H2 Br2 N2 O



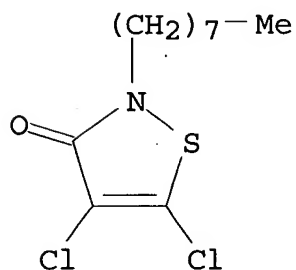
RN 182062-08-4 HCA

CN Acetamide, 2,2-dibromo-2-cyano-, mixt. with 2-bromo-2-nitro-1,3-propanediyl diacetate and 4,5-dichloro-2-octyl-3(2H)-isothiazolone (9CI) (CA INDEX NAME)

CM 1

CRN 64359-81-5

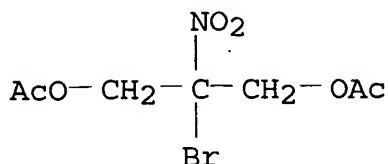
CMF C11 H17 Cl2 N O S



CM 2

CRN 34564-38-0

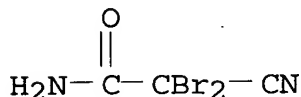
CMF C7 H10 Br N O6



CM 3

CRN 10222-01-2

CMF C3 H2 Br2 N2 O



IC ICM A01N043-80

ICI A01N043-80, A01N037-34, A01N037-02

CC 5-2 (Agrochemical Bioregulators)

Section cross-reference(s): 42, 43, 60

ST synergistic bactericide fungicide
isothiazolinone polyacetoxymethylene propionamide

IT Coating materials

Pulp, cellulose

Wastewater

(synergistic bactericides and fungicides for
industries of)

IT Bactericides, Disinfectants, and Antiseptics

Fungicides and Fungistats

(synergistic, bactericides and fungicides for
industries)

IT 182062-06-2 182062-07-3 182062-08-4

182062-09-5 182062-10-8 182062-11-9 182062-12-0 182062-13-1

182062-14-2

(synergistic bactericides and fungicides for
industries)

L32 ANSWER 22 OF 52 HCA COPYRIGHT 2005 ACS on STN

125:240846 Synergistic industrial antimicrobials containing
dichlorodithiolone, a bromine-containing organic compound, and a
3-isothiazolinone compound and method for sterilization.Tsuji, Katsuji; Tanaka, Juko; Hirashima, Hidenori (Yoshitomi
Pharmaceutical Industries, Ltd., Japan; Katayama Chemical Works Co).Jpn. Kokai Tokkyo Koho JP 08193014 A2 19960730 Heisei,
17 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1995-4526
19950113.

AB An industrial **disinfectant** comprises 4,5-dichloro-1,2-dithiol-3-one (I); a Br-contg. org. compd. (II) selected from 2,2-dibromo-3-nitrilopropionamide, 2-bromo-2-nitro-1,3-diacetoxypropane, 1,2-bisbromoacetoxyethane, 1,2-bisbromoacetoxypropane, 1,2,3-trisbromoacetoxypropane, and 1,4-bis(bromoacetoxy)-2-butene; and a 3-isothiazolone compd. (III) selected from 5-chloro-2-methyl-4-isothiazolin-3-one and 4,5-dichloro-2-n-octyl-4-isothiazolin-3-one in proportions reported to be synergistic (0.1-50 parts by wt. of II for 1 part of I, 0.01-2.5 parts of III for 1 part of I + II). Thus, in an expt. with *Pseudomonas* and *Flavobacterium*, the min. inhibitory concn. of an industrial **microbicide** contg. I 4, 1,2-bisbromoacetoxyethane 20, 5-chloro-2-methyl-4-isothiazolin-3-one 1, and propylene carbonate 75% had a min. inhibitory concn. (MIC) of 2 mg/L, whereas a similar mixt. not contg. 5-chloro-2-methyl-4-isothiazolin-3-one and instead having 76% propylene carbonate had an MIC of 25 mg/L.

IT 181818-90-6 181818-99-5
(as industrial **microbicide**)

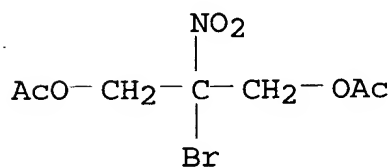
RN 181818-90-6 HCA

CN 3(2H)-Isothiazolone, 5-chloro-2-methyl-, mixt. with 2-bromo-2-nitro-1,3-propanediyl diacetate and 4,5-dichloro-3H-1,2-dithiol-3-one (9CI) (CA INDEX NAME)

CM 1

CRN 34564-38-0

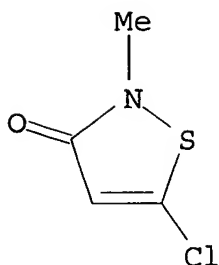
CMF C7 H10 Br N O6



CM 2

CRN 26172-55-4

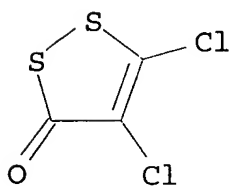
CMF C4 H4 Cl N O S



CM 3

CRN 1192-52-5

CMF C3 Cl2 O S2



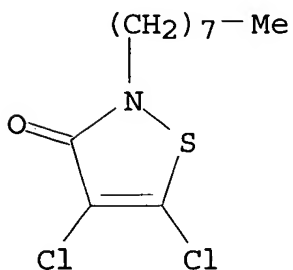
RN 181818-99-5 HCA

CN 3(2H)-Isothiazolone, 4,5-dichloro-2-octyl-, mixt. with
2-bromo-2-nitro-1,3-propanediyl diacetate and 4,5-dichloro-3H-1,2-
dithiol-3-one (9CI) (CA INDEX NAME)

CM 1

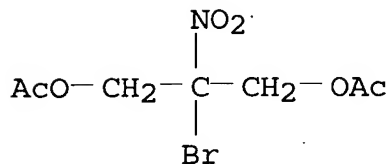
CRN 64359-81-5

CMF C11 H17 Cl2 N O S



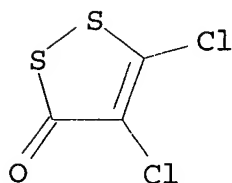
CM 2

CRN 34564-38-0
CMF C7 H10 Br N O6



CM 3

CRN 1192-52-5
CMF C3 Cl2 O S2



IC ICM A01N043-80
ICI A01N043-80, A01N031-04, A01N037-34; A01N043-80, A01N031-04, A01N033-20; A01N043-80, A01N031-04, A01N035-02
CC 5-2 (Agrochemical Bioregulators)
ST synergistic **antimicrobial** dichlorodithiolone bromine compd isothiazolone; **antimicrobial** dichlorodithiolone bromine compd isothiazolone deriv
IT **Bactericides, Disinfectants, and Antiseptics**
Fungicides and Fungistats
(industrial, synergistic, contg. dichlorodithiolone, bromine-contg. org. compd., and isothiazolone compd.)
IT 181818-88-2 181818-89-3 **181818-90-6** 181818-91-7
181818-93-9 181818-95-1 181818-97-3 181818-98-4
181818-99-5 181819-00-1 181819-01-2 181819-02-3
(as industrial **microbicide**)

L32 ANSWER 23 OF 52 HCA COPYRIGHT 2005 ACS on STN
125:240845 Synergistic industrial **bactericides** and **bacteriostats** containing dichlorodithiolone, bromoacetoxyalkylene derivative, and methylenebisthiocyanate and method for **sterilization**. Tsuji, Katsuji; Tanaka, Juko; Hirashima, Hidenori (Yoshitomi Pharmaceutical Industries, Ltd., Japan; Katayama Chemical Works Co). Jpn. Kokai Tokkyo Koho JP 08193016 A2 **19960730** Heisei, 14. pp. (Japanese). CODEN:

JKXXAF. APPLICATION: JP 1995-4525 19950113.

AB An industrial **disinfectant** comprises 4,5-dichloro-1,2-dithiol-3-one (I); a Br-contg. polyacetoxyalkylene deriv. (II) selected from 2-bromo-2-nitro-1,3-diacetoxypropane, 1,2-bisbromoacetoxyethane, 1,2-bisbromoacetoxypropane, 1,2,3-trisbromoacetoxypropane, and 1,4-bis(bromoacetoxy)-2-butene; and methylenebisithiocyanate (III) in proportions reported to be synergistic (0.1-50 parts by wt. of II for 1 part of I, 0.01-2.5 parts of III for 1 part of I + II). Thus, in an expt. with *Alcaligenes*, *Pseudomonas*, and *Flavobacterium*, the desired synergistic effect was obtained with 0.3-0.7 part III per part of I + 2-bromo-2-nitro-1,3-diacetoxypropane at 1:(0.3-30) part by wt.

IT **181810-26-4**
(synergistic industrial **bactericide**)

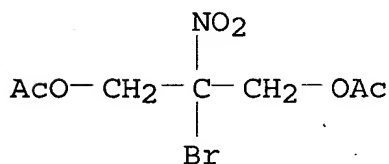
RN 181810-26-4 HCA

CN Thiocyanic acid, methylene ester, mixt. with 2-bromo-2-nitro-1,3-propanediyl diacetate and 4,5-dichloro-3H-1,2-dithiol-3-one (9CI)
(CA INDEX NAME)

CM 1

CRN 34564-38-0

CMF C7 H10 Br N O6



CM 2

CRN 6317-18-6

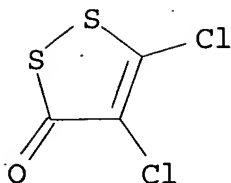
CMF C3 H2 N2 S2



CM 3

CRN 1192-52-5

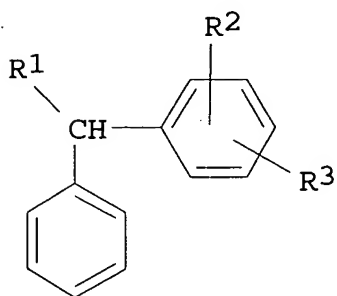
CMF C3 Cl2 O S2



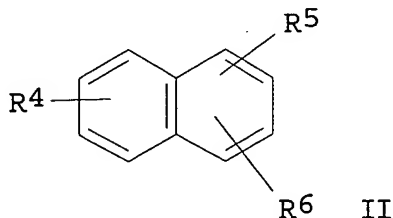
IC ICM A01N047-48
 ICI A01N047-48, A01N043-26, A01N037-02
 CC 5-2 (Agrochemical Bioregulators)
 ST synergistic **disinfectant** chlorodithiolone
 bromoacetoxyalkylene deriv methylenebisthiocyanate
 IT **Bactericides, Disinfectants, and Antiseptics**
 (industrial, synergistic, contg. dichlorodithiolone,
 bromoacetoxyalkylene deriv., and methylenebisthiocyanate)
 IT 181810-26-4 181810-28-6 181810-30-0 181810-32-2
 181810-34-4
 (synergistic industrial **bactericide**)

L32 ANSWER 24 OF 52 HCA COPYRIGHT 2005 ACS on STN
 125:176451 Slime control by **microbicides**. Matsumoto, Shinichi
 (Katayama Chemical Works Co, Japan). Jpn. Kokai Tokkyo Koho JP
 08157304 A2 19960618 Heisei, 10 pp. (Japanese). CODEN:
 JKXXAF. APPLICATION: JP 1994-301139 19941205.

GI



I



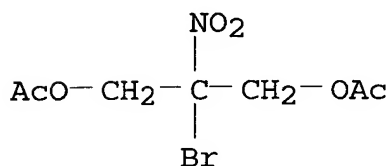
II

AB **Microbicide** such as methylenebisthiocyanate, isothiazolone
 compd., halogenated aliph. nitroalc., 3,5-dimethyltetrahydro-1,3,5-
 2H-thiadiazin-2-one, 2-(4-thiocyanomethylthio)benzothiazole, and
 iodourethane compds. are dissolved in I and/or II (R1 = H, Me; R2-R6
 = Cl-4 alkyl) solvents and hydrophilic org. solvent, and the soln.
 is found useful in controlling industrial slimes.

IT 34564-38-0

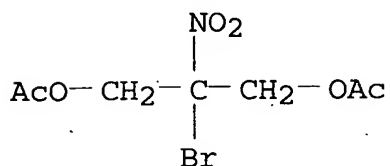
(slime control by **microbicide**)

RN 34564-38-0 HCA
 CN 1,3-Propanediol, 2-bromo-2-nitro-, diacetate (ester) (9CI) (CA
 INDEX NAME)



IC ICM A01N025-02
 ICS A01N033-20; A01N043-80; A01N043-88; A01N047-12; A01N047-48
 CC 60-2 (Waste Treatment and Disposal)
 Section cross-reference(s): 5
 ST slime control **microbicide** org solvent
 IT Slimes and Sludges
 (control of slime by **microbicide** in org. solvents)
 IT **Bactericides, Disinfectants, and Antiseptics**
Fungicides and Fungistats
 (slime control by **microbicide** in org. solvents)
 IT 52-51-7, 2-Bromo-2-nitro-1,3-propanediol 2634-33-5,
 1,2-Benzisothiazol-3(2H)-one 3568-73-8, 3,5-Dimethyltetrahydro-
 1,3,5-2H-thiadiazin-2-one 6317-18-6, Methylenebisthiocyanate
 21564-17-0 **34564-38-0** 55406-53-6, IPBC 55965-84-9
 69094-18-4, 2,2-Dibromo-2-nitroethanol
 (slime control by **microbicide**)
 IT 40766-31-2 89907-31-3
 (slime control by **microbicide** and)
 L32 ANSWER 25 OF 52 HCA COPYRIGHT 2005 ACS on STN
 123:265699 **Sterilization** in water systems using organobromine
 compounds and chlorination agents. Nobata, Yasuhiro; Uchama,
 Hiroshi; Ishimura, Aya (Hakuto Kk, Japan). Jpn. Kokai Tokkyo Koho
 JP 07171575 A2 **19950711** Heisei, 8 pp. (Japanese). CODEN:
 JKXXAF. APPLICATION: JP 1993-322627 19931221.
 AB The process comprises treatment of water systems with organobromine
 compds. chosen from N-bromoimides and aliph. Br compds. having
 .gtoreq.1 substituents chosen from CN, NO₂, CO, CO₂H, NH₂, alkoxy,
 OH, and SO₃H on C atoms at the .alpha.- and/or .beta.-positions to
 Br atoms simultaneous with chlorination agents. The process
 provides high activity in **sterilization** and slime control
 of cooling water systems, water for paper manuf., etc.
 IT **34564-38-0**, 1,3-Diacetoxy-2-bromo-2-nitropropane
 (**sterilization** of water with organobromine compds. and
 chlorination agents)
 RN 34564-38-0 HCA

CN 1,3-Propanediol, 2-bromo-2-nitro-, diacetate (ester) (9CI) (CA INDEX NAME)



IC ICM C02F001-50
ICS C02F001-50; C02F001-76
CC 61-5 (Water)
ST water **sterilization** organobromine chlorine; bromoimide chlorine water **sterilization**
IT **Bactericides, Disinfectants, and Antiseptics**
Fungicides and Fungistats
(**sterilization** of water with organobromine compds. and chlorination agents)
IT Water purification
(chlorination, **sterilization** of water with organobromine compds. and chlorination agents)
IT Water purification
(**disinfection, sterilization** of water with organobromine compds. and chlorination agents)
IT Water purification
(slime control, **sterilization** of water with organobromine compds. and chlorination agents)
IT 52-51-7, Myacide AS 70-23-5, Bromopyruvic acid ethyl ester 79-08-3, Bromoacetic acid 80-58-0, 2-Bromobutyric acid 540-51-2, 2-Bromoethanol 598-72-1, 2-Bromopropionic acid 5437-45-6, Merbac 35 7681-52-9, Sodium hypochlorite 7778-54-3, Calcium hypochlorite 7782-50-5, Chlorine, biological studies 10049-04-4, Chlorine dioxide 10222-01-2, DBNPA **34564-38-0**, 1,3-Diacetoxy-2-bromo-2-nitropropane 36900-69-3 37102-72-0, 1,2-Bis(bromoacetoxy)propane 39660-53-2, Bromosuccinimide 64503-08-8, 1,2,3-Tris(bromoacetoxy)propane 69094-18-4, 2,2-Dibromo-2-nitroethanol
(**sterilization** of water with organobromine compds. and chlorination agents)

L32 ANSWER 26 OF 52 HCA COPYRIGHT 2005 ACS on STN

123:191203 Industrial **microbicides** containing halo(hydroxyimino)acetic acids. Sugano, Hideki; Kamagami, Tsutomu; Yamamoto, Hideki; Horikoshi, Naomi; Nita, Takayuki; Odagiri, Mayumi; Takahashi, Nobuyasu (Junsei Chemical, Japan; Fuji Sangyo Co Ltd). Jpn. Kokai Tokkyo Koho JP 07173004 A2 **19950711** Heisei, 10 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1994-263925

19941027. PRIORITY: JP 1993-270906 19931028.

AB The industrial **microbicides** contain XC(:NOR2)CO2R1 [I; X = Cl, Br; R1 = H, C1-18 alkyl, (un)substituted aryl, (un)substituted aralkyl; R2 = H, alkylcarbonyl, haloalkylcarbonyl, cycloalkylcarbonyl, (un)substituted aralkylcarbonyl, 5-6-membered heterocyclylcarbonyl, CONHR3; R3 = C1-4 alkyl] as active ingredients. Industrial **bactericides** contg. I and industrial **antimicrobial** ingredients as active ingredients are also claimed. The **microbicides** are useful as slime inhibitors for wastewater from paper-making process and industrial wastewater, and as antiseptics for starch glues, wood products, leather, metal working fluids, paints, and adhesives. ClC(:NOH)CO2H, prepd. by treatment of H2NCH2CO2H.HCl with HCl and NaNO2 followed by hydrolysis, showed min. **bactericidal** concn. 5 ppm against Escherichia coli, vs. 5 ppm for 4,5-dichloro-1,2-dithiol-3-one. Combination of I and other industrial **microbicides** showed synergistic **antimicrobial** action for white water from paper manuf. process.

IT 167954-09-8

(industrial **microbicides** contg.

halo(hydroxyimino)acetic acids and optional other **microbicides**)

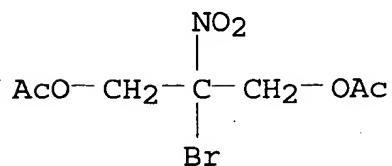
RN 167954-09-8 HCA

CN Acetic acid, bromo(hydroxyimino)-, ethyl ester, mixt. with 2-bromo-2-nitro-1,3-propanediyl diacetate (9CI) (CA INDEX NAME)

CM 1

CRN 34564-38-0

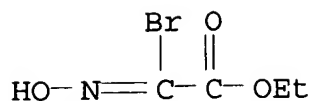
CMF C7 H10 Br N O6



CM 2

CRN 30822-63-0

CMF C4 H6 Br N O3

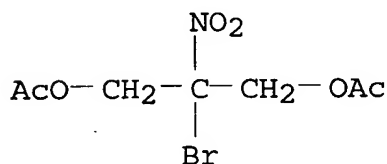


IT 34564-38-0

(industrial **microbicides** contg.
halo(hydroxyimino)acetic acids and optional other
microbicides)

RN 34564-38-0 HCA

CN 1,3-Propanediol, 2-bromo-2-nitro-, diacetate (ester) (9CI) (CA
INDEX NAME)



IC ICM A01N037-02

ICS A01N037-16; A01N047-24

CC 5-2 (Agrochemical Bioregulators)

Section cross-reference(s): 43, 60

ST halohydroxyiminoacetate prepn industrial **bactericide**
fungicide; **microbicide** industrial

halohydroxyiminoacetic acid prepn; hydroxyiminohaloacetic acid prepn
industrial **microbicide**

IT Algicides

Wastewater treatment

(industrial **microbicides** contg.

halo(hydroxyimino)acetic acids and optional other
microbicides)

IT Paper

(wastewater from manuf. of; industrial **microbicides**
contg. halo(hydroxyimino)acetic acids and optional other
microbicides)

IT **Bactericides, Disinfectants, and Antiseptics****Fungicides and Fungistats**(industrial, industrial **microbicides** contg.

halo(hydroxyimino)acetic acids and optional other
microbicides)

IT 98-88-4, Benzoyl chloride 108-24-7, Acetic anhydride 39178-35-3,
Isonicotinoyl chloride hydrochloride

(acylation of Et chloro(hydroxyimino)acetate; industrial
microbicides contg. halo(hydroxyimino)acetic acids and
optional other **microbicides**)

- IT 624-83-9, Methyl isocyanate
(addn. to Me chloro(hydroxyimino)acetate; industrial **microbicides** contg. halo(hydroxyimino)acetic acids and optional other **microbicides**)
- IT 162631-60-9P
(chlorination of; industrial **microbicides** contg. halo(hydroxyimino)acetic acids and optional other **microbicides**)
- IT 7803-49-8, Hydroxylamine, reactions
(condensation with glyoxylic acid; industrial **microbicides** contg. halo(hydroxyimino)acetic acids and optional other **microbicides**)
- IT 298-12-4, Glyoxylic acid
(condensation with hydroxylamine; industrial **microbicides** contg. halo(hydroxyimino)acetic acids and optional other **microbicides**)
- IT 96031-74-2P
(deprotection of; industrial **microbicides** contg. halo(hydroxyimino)acetic acids and optional other **microbicides**)
- IT 100-51-6, Benzenemethanol, reactions
(esterification of (hydroxyimino)acetic acid; industrial **microbicides** contg. halo(hydroxyimino)acetic acids and optional other **microbicides**)
- IT 111-87-5, Octanol, reactions
(esterification with (hydroxyimino)acetic acid; industrial **microbicides** contg. halo(hydroxyimino)acetic acids and optional other **microbicides**)
- IT 3545-80-0P, Acetic acid, (Hydroxyimino)-
(esterification with PhCH₂OH; industrial **microbicides** contg. halo(hydroxyimino)acetic acids and optional other **microbicides**)
- IT 4530-20-5, Boc-glycine
(esterification with PhOH; industrial **microbicides** contg. halo(hydroxyimino)acetic acids and optional other **microbicides**)
- IT 167953-95-9P
(halogenation of; industrial **microbicides** contg. halo(hydroxyimino)acetic acids and optional other **microbicides**)
- IT 167953-96-0 167953-97-1 167953-98-2 167953-99-3 167954-00-9
167954-01-0 167954-02-1 167954-03-2 167954-04-3 167954-05-4
167954-06-5 167954-07-6 167954-08-7 **167954-09-8**
167954-10-1 167954-11-2 167954-12-3
(industrial **microbicides** contg. halo(hydroxyimino)acetic acids and optional other **microbicides**)
- IT 14337-42-9P 69337-38-8P 167953-84-6P 167953-85-7P

167953-86-8P 167953-87-9P 167953-88-0P 167953-89-1P
167953-90-4P 167953-91-5P 167953-92-6P 167953-93-7P
167953-94-8P

(industrial **microbicides** contg.
halo(hydroxyimino)acetic acids and optional other
microbicides)

IT 14337-43-0P 30673-27-9P 30822-63-0P
(industrial **microbicides** contg.
halo(hydroxyimino)acetic acids and optional other
microbicides)

IT 52-51-7, 2-Bromo-2-nitro-1,3-propanediol 87-56-9, Mucochloric acid
272-16-2, 1,2-Benzisothiazole 488-11-9, Mucobromic acid
698-16-8, .alpha.-Chlorobenzaldoxime 1192-52-5 2038-44-0,
Dichloroglyoxime 2682-20-4, 2-Methyl-3-isothiazolone 3737-41-5,
3,3,4,4-Tetrachlorotetrahydrothiophene 1,1-dioxide 6317-18-6,
Methylene bis(thiocyanate) 7241-13-6, Hexabromodimethyl sulfone
10222-01-2, 2,2-Dibromo-2-cyanoacetamide 20679-58-7,
1,4-Bis(bromoacetoxy)-2-butene 26172-55-4 **34564-38-0**
34911-46-1 35691-65-7 51981-68-1, .alpha.-Chlorobenzaldoxime
acetate 64359-81-5, 4,5-Dichloro-2-octyl-3-isothiazolone
69094-18-4, 2,2-Dibromo-2-nitroethanol

(industrial **microbicides** contg.
halo(hydroxyimino)acetic acids and optional other
microbicides)

IT 55878-21-2P, Glycine phenyl ester hydrobromide
(reaction with HBr and NaNO.beta.; industrial
microbicides contg. halo(hydroxyimino)acetic acids and
optional other **microbicides**)

IT 57954-57-1, Glycine ethyl ester hydrobromide
(reaction with HBr and NaNO.beta.; industrial
microbicides contg. halo(hydroxyimino)acetic acids and
optional other **microbicides**)

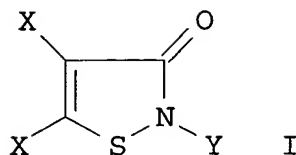
IT 80622-05-5P, Glycine phenyl ester hydrochloride
(reaction with HCl and NaNO.beta.; industrial
microbicides contg. halo(hydroxyimino)acetic acids and
optional other **microbicides**)

IT 616-34-2, Glycine methyl ester 623-33-6, Glycine ethyl ester
hydrochloride
(reaction with HCl and NaNO.beta.; industrial
microbicides contg. halo(hydroxyimino)acetic acids and
optional other **microbicides**)

L32 ANSWER 27 OF 52 HCA COPYRIGHT 2005 ACS on STN

123:27801 **Antimicrobial** solutions containing isothiazolone
compounds and stabilizers. Sano, Yoichi (Katayama Chemical Works
Co, Japan). Jpn. Kokai Tokkyo Koho JP 07082108 A2 **19950328**
Heisei, 17 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP
1993-224674 19930909.

GI

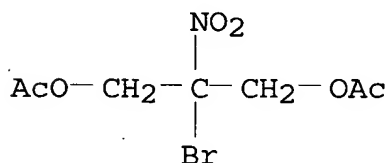


AB A **microbicidal** soln. contains isothiazolone compd. (I; X = H, halo; Y = alkyl) and a Br compd. and a formamide deriv. as stabilizers. For example, a **microbicide** consisted of 2-methyl-5-chloroisothiazolin-3-one, 2-methylisothiazolin-3-one, water, ethylene glycol; 2-bromo-2-nitro-1,3-diacetoxyp propane, and acetamide.

IT 34564-38-0 80658-59-9
(antimicrobial solns. contg. isothiazolone compds. and stabilizer)

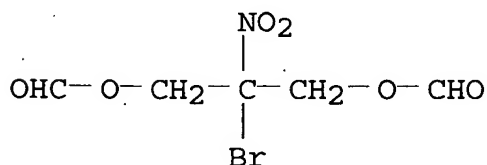
RN 34564-38-0 HCA

CN 1,3-Propanediol, 2-bromo-2-nitro-, diacetate (ester) (9CI) (CA INDEX NAME)



RN 80658-59-9 HCA

CN 1,3-Propanediol, 2-bromo-2-nitro-, diformate (ester) (9CI) (CA INDEX NAME)



IC ICM A01N043-80

ICS A01N025-04; A01N025-22

CC 5-2 (Agrochemical Bioregulators)

ST isothiazolone bromine acetamide deriv **microbicide**

IT **Bactericides, Disinfectants, and Antiseptics****Fungicides and Fungistats**

(antimicrobial solns. contg. isothiazolone compds. and stabilizers)

IT 52-51-7, 2-Nitro-2-bromo-1,3-propanediol 464-10-8,
Tribromonitromethane 7166-19-0, .beta.-Bromo-.beta.-nitrostyrene
10222-01-2, 2,2-Dibromo-3-nitrilopropionamide 30007-47-7,
5-Bromo-5-nitro-1,3-dioxane **34564-38-0** 53607-31-1,
1,1-Dibromo-1-nitro-2-propanol 53983-00-9 69094-18-4,
2,2-Dibromo-2-nitroethanol **80658-59-9** 164013-21-2
(antimicrobial solns. contg. isothiazolone compds. and stabilizer)

IT 55965-84-9
(antimicrobial solns. contg. isothiazolone compds. and stabilizers)

IT 60-35-5, Acetamide, uses 75-12-7, Formamide, uses 79-05-0,
Propionamide 88-96-0, Phthalamide 110-14-5, Succinamide
541-59-3, Maleimide 877-24-7, Potassium hydrogen phthalate
928-01-8, Maleic diamide
(antimicrobial solns. contg. isothiazolone compds. and stabilizers and)

L32 ANSWER 28 OF 52 HCA COPYRIGHT 2005 ACS on STN

122:99321 Synergistic **bactericides** and **fungicides**

containing dichloroglyoxime for paper industrial waters. Nita, Takayuki; Odagiri, Mayumi; Sugano, Hideki; Takahashi, Nobuyasu (Junsei Chemical, Japan; Fuji Sangyo Co Ltd). Jpn. Kokai Tokkyo Koho JP 06298607 A2 **19941025** Heisei, 11 pp. (Japanese).
CODEN: JKXXAF. APPLICATION: JP 1993-86002 19930413.

AB A synergistic **microbicide** consists of dichloroglyoxime and .gtoreq. 1 compd. selected from the group comprising 2-bromo-2-nitro-1,3-propanediol diacetate, 2-(4-hydroxyphenyl)-2-oxoacetohydroxymoyl chloride, .alpha.-chlorobenzaldoxime acetate, and hexabromodimethylsulfone. It controls **microbial** growth in waters used in industries manufg. papers, paints, starch adhesives, and clay slurry.

IT **160780-77-8**
(synergistic **bactericides** and **fungicides**
contg. dichloroglyoxime for paper industrial waters)

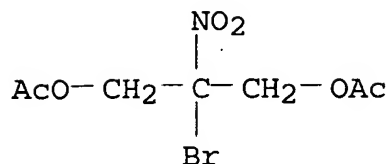
RN 160780-77-8 HCA

CN Ethanediiimidoyl dichloride, dihydroxy-, mixt. with
2-bromo-2-nitro-1,3-propanediyl diacetate (9CI) (CA INDEX NAME)

CM 1

CRN 34564-38-0

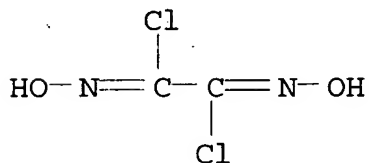
CMF C7 H10 Br N O6



CM 2

CRN 2038-44-0

CMF C2 H2 Cl2 N2 O2



IC ICM A01N037-52

ICI A01N037-52, A01N033-18, A01N041-10

CC 5-2 (Agrochemical Bioregulators)

Section cross-reference(s): 42, 43

ST synergistic **microbicide** industrial water

IT Adhesives

(starch; synergistic **bactericides** and
fungicides contg. dichloroglyoxime for industrial water
in manufg.)

IT Plastics

(synergistic **bactericides** and **fungicides**
contg. dichloroglyoxime for industrial water in manufg.)

IT Paper

(synergistic **bactericides** and **fungicides**
contg. dichloroglyoxime for paper industrial waters)

IT Coating materials

(paints, synergistic **bactericides** and
fungicides contg. dichloroglyoxime for industrial water
in manufg.)

IT **Bactericides, Disinfectants, and Antiseptics****Fungicides and Fungistats**

(synergistic, contg. dichloroglyoxime for paper industrial
waters)

IT 160780-77-8 160780-78-9 160780-79-0 160780-80-3

(synergistic **bactericides** and **fungicides**
contg. dichloroglyoxime for paper industrial waters)

L32 ANSWER 29 OF 52 HCA COPYRIGHT 2005 ACS on STN

121:248635 .alpha.-Chloroaldoxime as industrial **microbicide**..

Hirashima, Hidenori; Yamada, Yoshimasa (Katayama Chemical, Inc., Japan). Eur. Pat. Appl. EP 615688 A1 19940921, 18 pp.

DESIGNATED STATES: R: DE, GB, SE. (English). CODEN: EPXXDW.

APPLICATION: EP 1993-610021 19930319.

AB An industrial **microbicide** comprises .alpha.-chlorobenzaldoxime and, optionally, known industrial **microbicides**, forming synergistic mixts. The **microbicide** is esp. useful in the paper industry. A 1:1 mixt. of .alpha.-chlorobenzaldoxime and 4,5-dichloro-1,2-dithiol-3-one synergistically controlled microorganisms in a paper mill white water.

IT 158698-83-0

(.alpha.-chloroaldoxime-contg. synergistic industrial **microbicidal** mixts.)

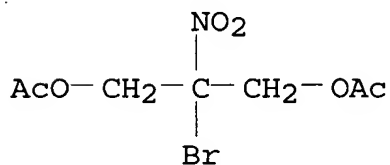
RN 158698-83-0 HCA

CN Benzenecarboximidoyl chloride, N-hydroxy-, mixt. with 2-bromo-2-nitro-1,3-propanediyl diacetate (9CI) (CA INDEX NAME)

CM 1

CRN 34564-38-0

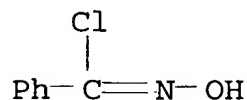
CMF C7 H10 Br N O6



CM 2

CRN 698-16-8

CMF C7 H6 Cl N O



IC ICM A01N037-52

CC 5-2 (Agrochemical Bioregulators)

ST chloroaldoxime industrial **microbicide**; synergism **microbicide** chloroaldoxime

IT **Bactericides, Disinfectants, and Antiseptics**
Fungicides and Fungistats

(industrial, synergistic, .alpha.-chloroaldoxime-contg.
synergistic industrial **microbicidal** mixts.)

IT 698-16-8, .alpha.-Chlorobenzaldoxime
(industrial **microbicide**.)

IT 158698-77-2 158698-78-3 158698-79-4 158698-80-7 158698-81-8
158698-82-9 **158698-83-0** 158698-84-1 158698-85-2
158698-86-3 158698-87-4 158698-88-5 158698-89-6 158698-90-9
158698-91-0 158698-92-1 158698-94-3 158698-95-4 158698-96-5
158698-97-6 158698-98-7 158698-99-8 158699-01-5 158699-02-6
158699-03-7 158699-04-8 158699-05-9 158699-06-0

(.alpha.-chloroaldoxime-contg. synergistic industrial
microbicidal mixts.)

L32 ANSWER 30 OF 52 HCA COPYRIGHT 2005 ACS on STN

120:238279 **Microbicides** containing glyoxime derivatives.

Tsuji, Katsuji (Katayama Chemical Works Co, Japan). Jpn. Kokai
Tokkyo Koho JP 06024910 A2 **19940201** Heisei, 21 pp.

(Japanese). CODEN: JKXXAF. APPLICATION: JP 1993-26852 19930216.

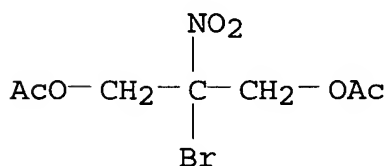
PRIORITY: JP 1992-29642 19920217; JP 1992-120198 19920513.

AB A **microbicide** contains monohalogenated glyoxime, with or
without a dihalogenated glyoxime and other **microbicides** to
control **microbial** growth on the skin, clin. equipment,
medical goods, and industrial waters. The **microbicide** is
nonflammable, and effective even in the presence of reducing agents.

IT **34564-38-0**, 2-Bromo-2-nitro-1,3-diacetoxyp propane
(**microbicide** compn. contg. glyoximes and)

RN 34564-38-0 HCA

CN 1,3-Propanediol, 2-bromo-2-nitro-, diacetate (ester) (9CI) (CA
INDEX NAME)



IC ICM A01N035-10

CC 5-2 (Agrochemical Bioregulators)

Section cross-reference(s): 63

ST **microbicide** glyoxime deriv medical goods

IT **Bactericides, Disinfectants, and Antiseptics**

Fungicides and Fungistats

(glyoxime derivs.)

IT Pulp, cellulose

(manuf. of, waste water in, **microbicides** for)

IT Medical goods

Pharmaceutical dosage forms

- (**microbicidal glyoximes in**)
- IT 18496-25-8, Sulfide ion
- (**microbicidal activity of glyoximes in presence of**)
- IT 557-30-2D, Glyoxime, derivs.
- (**microbicide compn. contg.**)
- IT 52-51-7, 2-Bromo-2-nitropropane-1,3-diol 698-16-8,
.alpha.-Chlorobenzaldoxime 1897-50-3, 5-Chloro-2,4,6-
trifluoroisophthalonitrile 2682-20-4, 2-Methyl-4-isothiazolin-3-
one 3064-70-8, Bis(trichloromethyl)sulfone 3737-41-5,
3,3,4,4-Tetrachlorotetrahydrothiophene-1,1-dioxide 3785-34-0,
1,2-Bis(bromoacetoxy)ethane 6317-18-6, Methylenebis(thiocyanate)
7166-19-0, .beta.-Bromo-.beta.-nitrostyrene 7241-13-6,
Bis(tribromomethyl)sulfone 20679-58-7, 1,4-Bis(bromoacetoxy)-2-
butene 26172-55-4, 5-Chloro-2-methyl-4-isothiazolin-3-one
30007-47-7, 5-Bromo-5-nitro-1,3-dioxane 34564-38-0,
2-Bromo-2-nitro-1,3-diacetoxypropane 37102-72-0,
1,2-Bis(bromoacetoxy)propane 64503-08-8, 1,2,3-
Tris(bromoacetoxy)propane 69094-18-4, 2,2-Dibromo-2-nitro-1-
ethanol 104581-68-2, 5-Chloro-2,4-difluoro-6-
methoxyisophthalonitrile 109793-93-3 154504-49-1
- (**microbicide compn. contg. glyoximes and**)
- IT 9004-34-6P
- (pulp, manuf. of, waste water in, **microbicides** for)

L32 ANSWER 31 OF 52 HCA COPYRIGHT 2005 ACS on STN

120:210793 Synergistic **microbides** useful in many industries.
Sano, Yoichi; Tanaka, Juko (Katayama Chemical Works Co, Japan).
Jpn. Kokai Tokkyo Koho JP 05320004 A2 19931203 Heisei, 17
pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1992-127748
19920520.

AB A synergistic **microbicide** contains N-bromoacetamide in
combination with .gtoreq. 1 compd. selected from the group
comprising alkylenebis(thiocyanate), 3-isothiazolone derivs.,
3-isothiazolone derivs., 3-isothiazolone derives.-metal salt
complexes, thiadiazine derivs., org. bromonitro compds., org.
bromocyano compds., org. bromoacetic acid esters, org. bromosulfone
derivs., s-triazine compds., halogenated oxime compds., amino alcs.,
and glutardialdehyde. Fourteen specific mixts. are claimed. The
microbides are useful in industries manufg. paper and paint
or in various oils.

IT 154202-52-5

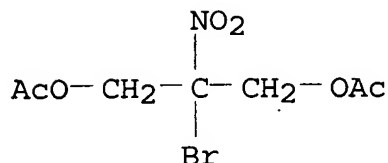
(synergistic **microbicide** contg., industrial)

RN 154202-52-5 HCA

CN Acetamide, N-bromo-, mixt. with 2-bromo-2-nitro-1,3-propanediyl
diacetate (9CI) (CA INDEX NAME)

CRN 34564-38-0

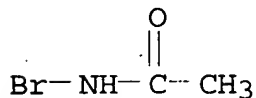
CMF C7 H10 Br N O6



CM 2

CRN 79-15-2

CMF C2 H4 Br N O



IC ICM A01N037-18

ICI A01N037-18, A01N047-48; A01N037-18, A01N043-78; A01N037-18, A01N043-88; A01N037-18, A01N037-00; A01N037-18, A01N041-04; A01N037-18, A01N043-64; A01N037-18, A01N047-40; A01N037-18, A01N033-02; A01N037-18, A01N031-00

CC 5-2 (Agrochemical Bioregulators)

ST synergism **microbicide** bromoacetamide industrial

IT Slimes and Sludges
Slurries

(control of, by synergistic **microbicides**)

IT Oils

(synergistic **microbicide** contg.)

IT Coating materials

(paints, synergistic **microbicide** contg.)IT **Bactericides, Disinfectants, and Antiseptics****Fungicides and Fungistats**

(synergistic, contg. bromoacetamide, industrial)

IT 154202-47-8 154202-48-9 154202-49-0 154202-50-3 154202-51-4

154202-52-5 154202-53-6 154202-54-7 154202-55-8

154202-56-9 154202-57-0 154202-58-1 154202-59-2 154202-60-5

(synergistic **microbicide** contg., industrial)

L32 ANSWER 32 OF 52 HCA COPYRIGHT 2005 ACS on STN

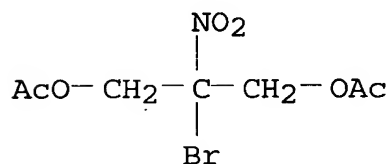
120:200132 Industrial **microbicide** and a method for killing**microbes** for industrial use. Tsuji, Katsuji; Hirashima,

Hidenori (Katayama Chemical, Inc., Japan; Yoshitomi Pharmaceutical

Industries, Ltd.). Eur. Pat. Appl. EP 571313 A2 19931124,

54 pp. DESIGNATED STATES: R: DE, FR, GB, SE. (English). CODEN: EPXXDW. APPLICATION: EP 1993-610031 19930518. PRIORITY: JP 1992-125105 19920518; JP 1992-130929 19920522; JP 1993-103140 19930428.

- AB An industrial **microbicide** which comprises .gtoreq.1 haloglyoxime deriv. of the formula Z-O-N=C(X)-C(Y)=N-O-Z (X is a halogen atom; Y is H, a halogen atom or a lower C1-4 alkyl; and Z is H or an optionally halogenated lower C1-5 alkanoyl group); and a known industrial **microbicidal** ingredient selected from the group consisting of an organonitrogensulfur compd., an organohalogen compd., an organonitrogen compd. and an organosulfur compd.; and optionally a carrier or diluent.
- IT **34564-38-0**
(industrial **microbicidal** compn. contg., for water supply systems)
- RN 34564-38-0 HCA
- CN 1,3-Propanediol, 2-bromo-2-nitro-, diacetate (ester) (9CI) (CA INDEX NAME)



- IC ICM A01N037-52
- ICI A01N037-52, A01N047-48, A01N043-80, A01N035-10, A01N041-10, A01N037-34, A01N033-20, A01N037-48, A01N037-02, A01N043-10, A01N033-18, A01N043-32
- CC 61-8 (Water)
- ST **microbicide** industrial water system
- IT **Bactericides, Disinfectants, and Antiseptics**
(industrial **microbicidal** compn. contg. haloglyoxime derivs.)
- IT Water purification
(biofouling control, industrial **microbicidal** compn. contg. haloglyoxime derivs. for)
- IT 89715-76-4 153749-66-7 153749-67-8 153749-68-9 153749-69-0
(industrial **microbicidal** compn. contg. di-Me glutarate and, for water supply systems)
- IT 1119-40-0, Dimethyl glutarate
(industrial **microbicidal** compn. contg. dichloroglyoxime diacetate and, for water supply systems)
- IT 2038-44-0, Dichloroglyoxime 9016-45-9, Polyoxyethylene nonylphenyl ether
(industrial **microbicidal** compn. contg. monochloroglyoxime and diethylene glycol and, for water supply

systems)
IT 111-46-6, miscellaneous 111-77-3, Diethylene glycol monomethyl ether
(industrial **microbicidal** compn. contg. monochloroglyoxime and, for water supply systems)
IT 52-51-7 698-16-8, .alpha.-Chlorobenzaldoxime 1192-52-5, 4,5-Dichloro-1,2-dithiol-3-one 1897-50-3, 5-Chloro-2,4,6-trifluoroisophthalonitrile 2682-20-4, 2-Methyl-4-isothiazolin-3-one 3064-70-8, Bis(trichloromethyl)sulfone 3737-41-5, 3,3,4,4-Tetrachlorotetrahydrothiophene-1,1-dioxide 3785-34-0, 1,2-Bis(bromoacetoxy)ethane 4732-58-5 5437-60-5 6317-18-6, Methylenebisithiocyanate 7166-19-0, .beta.-Bromo-.beta.-nitrostyrene 7241-13-6, Bis(tribromomethyl)sulfone 10222-01-2 20679-58-7, 1,4-Bis(bromoacetoxy)-2-butene 26172-55-4, 5-Chloro-2-methyl-4-isothiazolin-3-one 30007-47-7, 5-Bromo-5-nitro-1,3-dioxane 34564-38-0 37102-72-0, 1,2-Bis(bromoacetoxy)propane 64359-81-5 64503-08-8, 1,2,3-Tris(bromoacetoxy)propane 69094-18-4 104581-68-2
(industrial **microbicidal** compn. contg., for water supply systems)

L32 ANSWER 33 OF 52 HCA COPYRIGHT 2005 ACS on STN

119:175868 Cyclodextrin inclusion compounds of **microbicides**..

Watanabe, Michio (Permachem Asia Ltd, Japan). Jpn. Kokai Tokkyo Koho JP 05163104 A2 19930629 Heisei, 5 pp. (Japanese).
CODEN: JKXXAF. APPLICATION: JP 1991-350710 19911212.

AB Inclusion compds. of cyclodextrin with 2,2-dibromo-2-nitroethanol (I), 1,1-dibromo-1-nitro-2-acetoxyethane, 2-bromo-2-nitro-1,3-diacetoxypropane, 2-(thiocyanomethylthio)benzothiazole, 2-bromo-2-nitropropane-1,3-diol, or mixts. of .apprx.80% 4-(2-nitrobutyl)morpholine and .apprx.20% 4,4'-(2-ethyl-2-nitrotrimethylene)dimorpholine are industrial **microbicides**. I (7.0 g) and 10 g .beta.-cyclodextrin were stirred in 250 g H2O at 50.degree. for 2 h and cooled to room temp., to give 4.2 g inclusion compd. contg. 22.1% I. The inclusion compd. inhibited the growth of **Bacillus subtilis**, **Escherichia coli**, **Klebsiella pneumoniae**, **Aspergillus niger**, and **Penicillium citrinum** with min. inhibitory concns. of 66, 66, 66, 66, and 33 ppm, resp. Min. inhibitory concns. of the inclusion compd. against other several **bacteria** and **fungi** are also described.

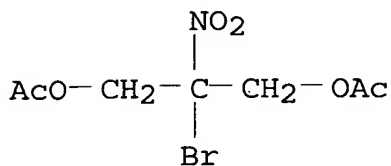
IT 150295-56-0
(industrial **bactericides** and **fungicides** contg.)

RN 150295-56-0 HCA

CN Cyclodextrin, compd. with 2-bromo-2-nitro-1,3-propanediyl diacetate (9CI) (CA INDEX NAME)

CM 1

CRN 34564-38-0
CMF C7 H10 Br N O6



CM 2

CRN 12619-70-4
CMF Unspecified
CCI MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

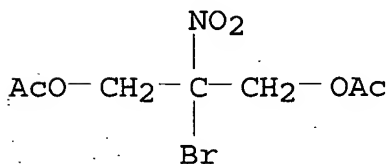
IT 150295-47-9P 150295-48-0P 150397-13-0P
(prepn. of, as industrial **bactericide** and
fungicide)

RN 150295-47-9 HCA

CN .beta.-Cyclodextrin, compd. with 2-bromo-2-nitro-1,3-propanediyl
diacetate (9CI) (CA INDEX NAME)

CM 1

CRN 34564-38-0
CMF C7 H10 Br N O6

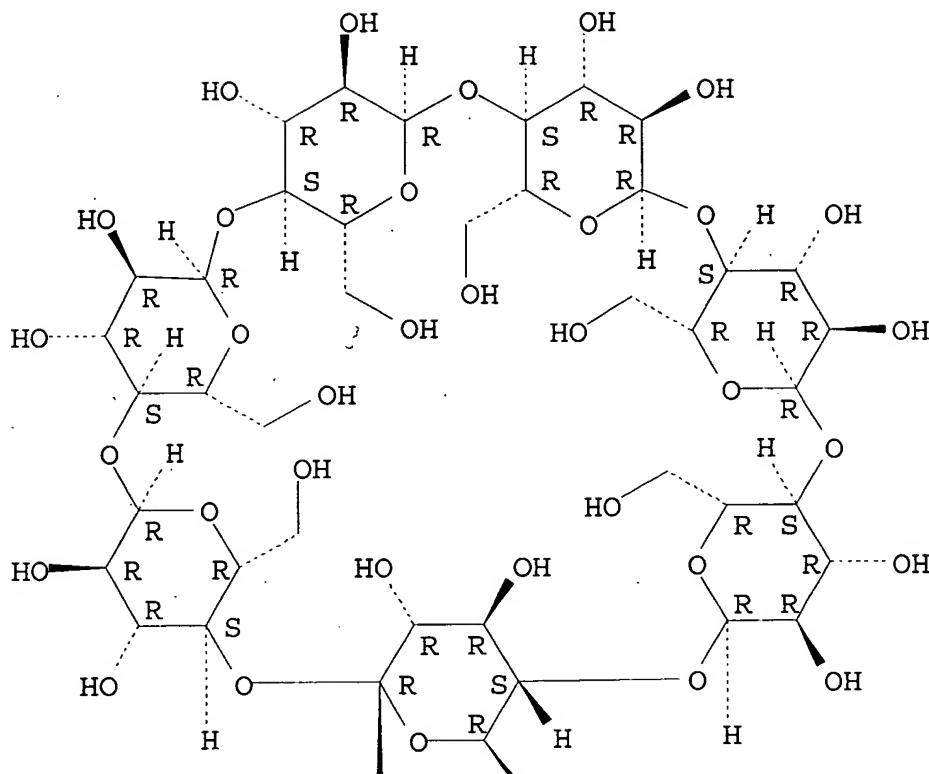


CM 2

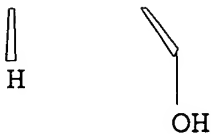
CRN 7585-39-9
CMF C42 H70 O35

Absolute stereochemistry.

PAGE 1-A



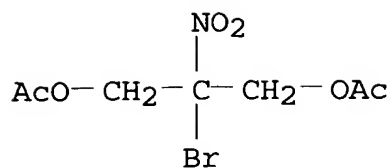
PAGE 2-A



RN 150295-48-0 HCA
CN .alpha.-Cyclodextrin, compd. with 2-bromo-2-nitro-1,3-propanediyl
diacetate (9CI) (CA INDEX NAME)

CM 1

CRN 34564-38-0
CMF C7 H10 Br N O6

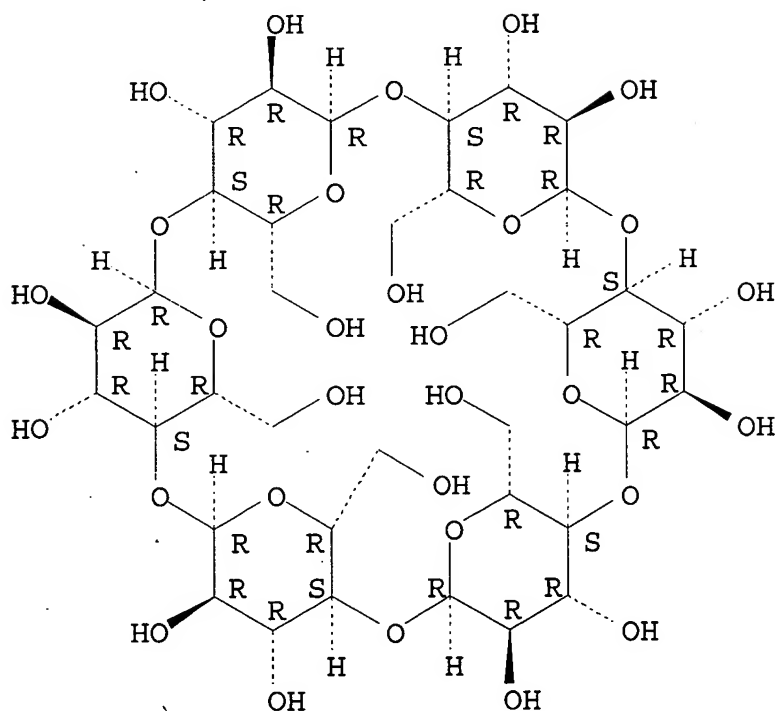


CM 2

CRN 10016-20-3

CMF C36 H60 O30

Absolute stereochemistry.



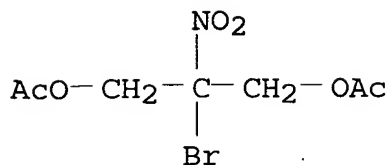
RN 150397-13-0 HCA

CN .gamma.-Cyclodextrin, compd. with 2-bromo-2-nitro-1,3-propanediyl diacetate (9CI) (CA INDEX NAME)

CM 1

CRN 34564-38-0

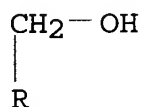
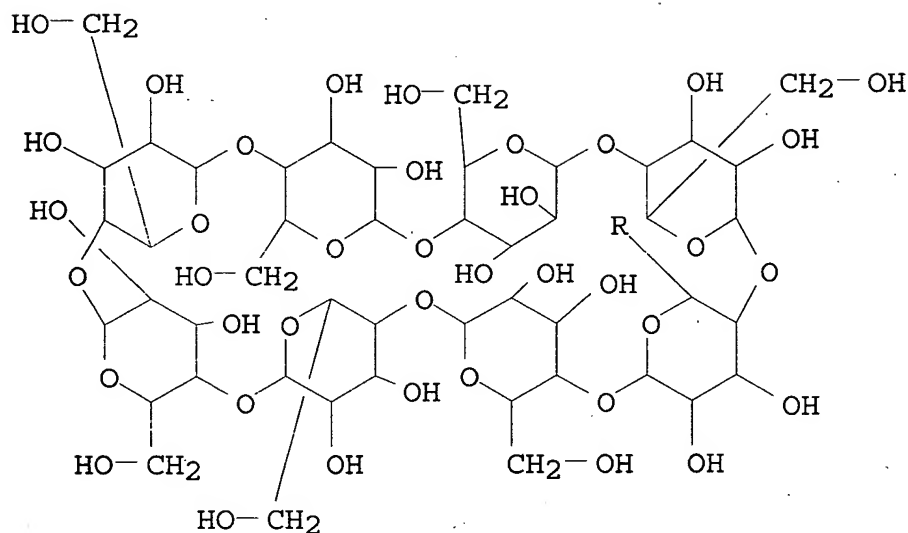
CMF C7 H10 Br N O6



CM 2

CRN 17465-86-0

CMF C48 H80 O40



IC ICM A01N043-84
 ICS A01N025-22; A01N025-32; A01N033-20; A01N047-48
 CC 5-2 (Agrochemical Bioregulators)
 ST cyclodextrin bromonitroethanol inclusion industrial
bactericide; bromonitroacetoxyethane
 bromonitrodiacetoxypropane cyclodextrin inclusion **fungicide**
 ; thiocyanomethylthiobenzothiazole bromonitropropanediol
 cyclodextrin inclusion **bactericide**; nitrobutylmorpholine
 ethylnitrotrimethylenedimorpholine cyclodextrin inclusion
bactericide
 IT **Bactericides, Disinfectants, and Antiseptics**

Fungicides and Fungistats

(industrial, inclusion compds. with cyclodextrins)

IT 150295-54-8 150295-55-9 **150295-56-0** 150295-57-1
 150295-58-2 150295-59-3

(industrial **bactericides** and **fungicides** contg.)

IT 150295-41-3P 150295-42-4P 150295-43-5P 150295-44-6P
 150295-45-7P 150295-46-8P **150295-47-9P**
150295-48-0P 150295-49-1P 150295-50-4P 150295-51-5P
 150295-52-6P 150295-53-7P **150397-13-0P**

(prepn. of, as industrial **bactericide** and **fungicide**)

L32. ANSWER 34 OF 52 HCA COPYRIGHT 2005 ACS on STN

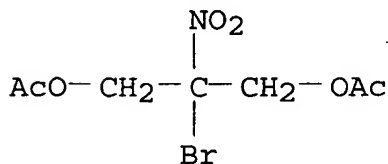
118:228250. .alpha.-Chlorobenzaldoxime-containing **antimicrobial** agents for industrial use.. Katayama, Sakae; Hirashima, Hidenori; Yamada, Yoshimasa (Katayama Chemical Works Co, Japan). Jpn. Kokai Tokkyo Koho JP 05070306 A2 **19930323** Heisei, 10 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1991-283062 19911029. PRIORITY: JP 1990-417712 19901214.

AB **Antimicrobial** agents for industrial use contain .alpha.-chlorobenzaldoxime (I) with/without organothiocyano compds. (such as methylene bistiocyanate), organobromo compds. (e.g., 2-bromo-3-nitropropionamide), organonitro compds. (e.g., N,4-dihydroxy-2-oxobenzeneethaneimidoyl chloride) and/or organosulfur compds. (e.g., 3,3,4,4-tetrachlorotetrahydrothiophene 1,1-dioxide). Thus, a compn. contained I 15 and polyethylene glycol 85 parts. Cooling water for paper manuf. was **sterilized** with the compn. in the presence of reducing agents, such as Na2SO3.

IT **34564-38-0**
 (antimicrobial agents contg. chlorobenzaldoxime and, for industrial uses)

RN 34564-38-0 HCA

CN 1,3-Propanediol, 2-bromo-2-nitro-, diacetate (ester) (9CI) (CA INDEX NAME)



IC ICM A01N035-10

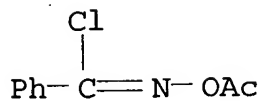
ICI A01N035-10, A01N033-18; A01N035-10, A01N033-20; A01N035-10, A01N037-02; A01N035-10, A01N037-34; A01N035-10, A01N037-46; A01N035-10, A01N043-10; A01N035-10, A01N043-32; A01N035-10, A01N043-80; A01N035-10, A01N047-02; A01N035-10

- CC 5-2 (Agrochemical Bioregulators)
Section cross-reference(s): 43
- ST industry **microbicide** chlorobenzaldoxime
- IT **Bactericides, Disinfectants, and Antiseptics**
Fungicides and Fungistats
(industrial, chlorobenzaldoxime-contg.)
- IT 52-51-7, 2-Bromo-2-nitropropane-1,3-diol 79-15-2, N-Bromoacetamide
464-10-8, Tribromonitromethane 683-57-8, 2-Bromoacetamide
1192-52-5, 4,5-Dichloro-1,2-dithiol-3-one 1897-50-3,
5-Chloro-2,4,6-trifluoroisophthalonitrile 2634-33-5,
1,2-Benzoisothiazolin-3-one 2682-20-4, 2-Methyl-4-isothiazolin-3-
one 3479-80-9 3737-41-5, 3,3,4,4-Tetrachlorotetrahydrothiophene
1,1-dioxide 3785-34-0, 1,2-Bis(bromoacetoxy)ethane 5437-45-6,
Benzylbromoacetate 6317-18-6 7166-19-0, .beta.-Bromo-.beta.-
nitrostyrene 10222-01-2, 2,2-Dibromo-3-nitrilopropionamide
20679-58-7, 1,4-Bis(bromoacetoxy)-2-butene 26172-55-4,
5-Chloro-2-methyl-4-isothiazolin-3-one 26530-20-1,
2-n-Octylisothiazolin-3-one 30007-47-7, 5-Bromo-5-nitro-1,3-
dioxane 34564-38-0 34911-46-1 35691-65-7 37102-72-0,
1,2-Bis(bromoacetoxy)propane 53607-31-1, 1,1-Dibromo-1-nitro-2-
propanol 53607-60-6 53983-00-9 64359-81-5,
4,5-Dichloro-2-n-octylisothiazolin-3-one 69094-18-4 104581-68-2,
5-Chloro-2,4-difluoro-6-methoxyisophthalonitrile 133346-10-8
(antimicrobial agents contg. chlorobenzaldoxime and,
for industrial uses)
- IT 698-16-8, .alpha.-Chloro-benzaldoxime
(antimicrobial agents contg., for industrial use)
- L32 ANSWER 35 OF 52 HCA COPYRIGHT 2005 ACS on STN
- 118:163245 Synergistic **microbicidal** compositions comprising
chlorobenzaldoxime and bromopropane derivatives. Funatsu, Ryoji;
Nishizawa, Kazuyuki; Mitsui, Susumu (Somar Corp., Japan). Eur. Pat.
Appl. EP 524716 A1 19930127, 7 pp. DESIGNATED STATES: R:
DE, FR, GB. (English). CODEN: EPXXDW. APPLICATION: EP 1992-303733
19920424. PRIORITY: JP 1991-210156 19910726.
- AB Synergistic **microbicidal** compns. comprise an
.alpha.-chlorobenzaldoxime acetate deriv. ClnC6H5-nCCl:NOAc (I; n =
0, 1, 2) and 2-bromo-2-nitro-1,3-diacetoxypropane (II). A compn.
contg. I (n = 0) 18, II 2, diethylene glycol mono-Me ether 77, and
Rapisol B-80 3 parts was synergistically active against Pseudomonas
aeruginosa, Aerobacter aerogenes, **Bacillus subtilis**, and
other microorganisms in vitro.
- IT 146662-89-7 146662-91-1 146686-97-7
(microbicide, synergistic)
- RN 146662-89-7 HCA
- CN Benzenecarboximidoyl chloride, N-(acetyloxy)-, mixt. with
2-bromo-2-nitro-1,3-propanediyl diacetate (9CI) (CA INDEX NAME)

CM 1

CRN 51981-68-1

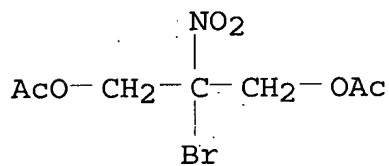
CMF C9 H8 Cl N O2



CM 2

CRN 34564-38-0

CMF C7 H10 Br N O6



RN 146662-91-1 HCA

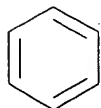
CN Benzenecarboximidoyl chloride, N-(acetyloxy)dichloro-, mixt. with 2-bromo-2-nitro-1,3-propanediyl diacetate (9CI) (CA INDEX NAME)

CM 1

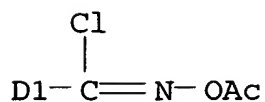
CRN 146662-90-0

CMF C9 H6 Cl3 N O2

CCI IDS



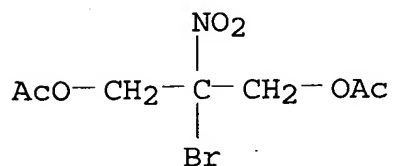
2 (D1-Cl)



CM 2

CRN 34564-38-0

CMF C7 H10 Br N O6



RN 146686-97-7 HCA

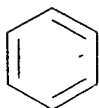
CN Benzenecarboximidoyl chloride, N-(acetyloxy)-ar-chloro-, mixt. with
2-bromo-2-nitro-1,3-propanediyl diacetate (9CI) (CA INDEX NAME)

CM 1

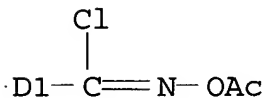
CRN 146686-96-6

CMF C9 H7 Cl2 N O2

CCI IDS



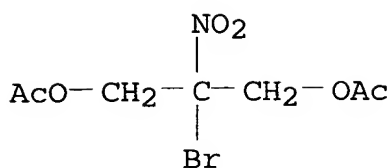
D1-Cl



CM 2

CRN 34564-38-0

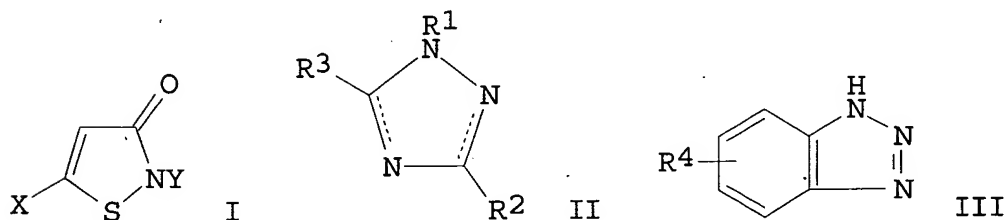
CMF C7 H10 Br N O6



IC ICM A01N037-52
 CC 5-2 (Agrochemical Bioregulators)
 ST **microbicide** synergism chlorobenzaldoxime bromopropane
 IT **Bactericides, Disinfectants, and Antiseptics**
Fungicides and Fungistats
 (synergistic, chlorobenzaldoxime acetate- and
 bromonitrodiacetoxyp propane-contg. compns.)
 IT 146662-89-7 146662-91-1 146686-97-7
 (microbicide, synergistic)

L32 ANSWER 36 OF 52 HCA COPYRIGHT 2005 ACS on STN
 118:80942 Method for stabilization of isothiazolone derivatives using
 triazoles or benzotriazoles and nitro alcohols. Fukuda, Takeshi;
 Uejima, Takuo; Watanabe, Michio (Permachem Asia, Ltd., Japan). Jpn.
 Kokai Tokkyo Koho JP 04182474 A2 19920630 Heisei, 7 pp.
 (Japanese). CODEN: JKXXAF. APPLICATION: JP 1990-310179 19901117.

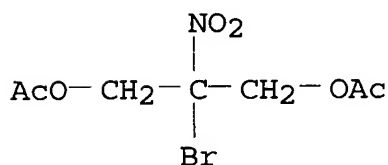
GI



AB A soln. of isothiazolones (I; X = H, halo; Y = lower alkyl) is stabilized by adding .gtoreq.1 triazoles and .gtoreq.1 nitro alcs., preferably selected from 1,2,4-triazoles (II; R1 = H, alkyl, Ph; R2, R3 = H, alkyl, Ph, oxo), benzotriazoles (III; R4 = H, alkyl, Ph, halo, NO2), and nitro alcs. R5O(CH2)nCR6R7NO2 [n = 1-3; R5 = H, Ac; R6 = H, Br, Cl, R7O(CH2)n; R7 = H, Br, Cl]. I are used as slimicides in paper processing or **disinfectants** for polymer emulsions. The combination of a triazole and a nitro alc. shows synergistic effect on the stabilization of I. Thus, Zonen F

contg. .apprx.14% 5-chloro-2-methylisothiazolin-3-one (IV) and 2-methylisothiazolin-3-one (V) (Ichikawa Gosei Kagaku Inc.) 50, H₂O 46, 2-bromo-2-nitropropan-1,3-diol 1, and 1,2,4-triazole 3 parts were stirred to form a soln. which was stored at 50.degree. for 30 days to show residual ratio 96.2% IV and 90.5% V, vs. 0% for an aq. soln. without IV and V.

IT 34564-38-0, 2-Bromo-2-nitro-1,3-diacetyloxypropane
(synergistic stabilizer, for isothiazolone derivs.)
RN 34564-38-0 HCA
CN 1,3-Propanediol, 2-bromo-2-nitro-, diacetate (ester) (9CI) (CA INDEX NAME)



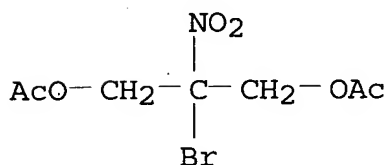
IC ICM C07D275-03
ICS C07C205-26; C07D249-08; C07D249-12; C07D249-18
CC 28-10 (Heterocyclic Compounds (More Than One Hetero Atom))
IT **Bactericides, Disinfectants, and Antiseptics**
(isothiazolone soln. contg. triazoles benzotriazoles and nitro alcs., for polymer emulsions)
IT 52-51-7, 2-Bromo-2-nitropropane-1,3-diol 94-97-3,
5-Chlorobenzotriazole 95-14-7, 1H-Benzotriazole 126-11-4,
Tris(hydroxymethyl)nitromethane 288-88-0, 1H-1,2,4-Triazole 2440-22-4,
2-(2-Hydroxy-5-methylphenyl)benzotriazole 25973-55-1,
2-(3,5-Di-tert-amyl-2-hydroxyphenyl)benzotriazole 34564-38-0
, 2-Bromo-2-nitro-1,3-diacetyloxypropane 53607-26-4 69094-18-4,
2,2-Dibromo-2-nitro-1-ethanol
(synergistic stabilizer, for isothiazolone derivs.)
L32 ANSWER 37 OF 52 HCA COPYRIGHT 2005 ACS on STN
117:193888 Synergistic slime control agents in papermaking. Takahashi, Nobuyasu; Nita, Takayuki (Junsei Chemical Co., Ltd., Japan; Fuji Sangyo K. K.). Jpn. Kokai Tokkyo Koho JP 04146298 A2
19920520 Heisei, 4 pp. (Japanese). CODEN: JKXXAF.
APPLICATION: JP 1990-263752 19901003.
AB The title agents contain glutaraldehyde (I) and halogenated aliph. nitro alcs. R1CX(NO2)CHRO2 (R = H, alkyl; R1 = H, halo, alkyl, hydroxyalkyl, acetoxyalkyl; R2 = H, Ac; X = halo). Thus, slime control agent contg. I 45, 2-bromo-2-nitropropane-1,3-diol 5, and H₂O 50 parts controlled slime in white water at 100 ppm.
IT 144136-61-8
(synergistic slime-control agents, for papermaking)
RN 144136-61-8 HCA

CN Pentanedial, mixt. with 2-bromo-2-nitro-1,3-propanediyl diacetate
(9CI) (CA INDEX NAME)

CM 1

CRN 34564-38-0

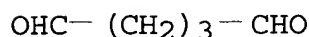
CMF C7 H10 Br N O6



CM 2

CRN 111-30-8

CMF C5 H8 O2



IC ICM D21H021-04

CC 43-7 (Cellulose, Lignin, Paper, and Other Wood Products)
Section cross-reference(s): 5

IT **Bactericides, Disinfectants, and Antiseptics**

Fungicides and Fungistats

(synergistic, contg. aliph. nitro alcs. and glutaraldehyde, for
slime control in papermaking)

IT 111-30-8D, Glutaraldehyde, mixts. with aliph. nitro alcs.

129879-02-3 144136-59-4 144136-60-7 **144136-61-8**

(synergistic slime-control agents, for papermaking)

L32 ANSWER 38 OF 52 HCA COPYRIGHT 2005 ACS on STN

116:101104 Synergistic industrial **microbicides** containing

.beta.-bromo-.beta.-nitrostyrene and 2-bromo-2-nitro-1,3-

diacetoxyp propane and/or 2,2-dibromo-2-nitroethanol. Ito, Yosuke;

Tsuji, Katsuji; Katayama, Sakae (Katayama Chemical, Inc., Japan).

Jpn. Kokai Tokkyo Koho JP 03232802 A2 **19911016** Heisei, 6

pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1990-24971

19900202.

AB Industrial **microbicides** contain .beta.-bromo-.beta.-

nitrostyrene (I) and 2-bromo-2-nitro-1,3-diacetoxyp propane and/or

2,2-dibromo-2-nitroethanol (II). I-II (50:50) (by wt.) mixt.

controlled **bacteria** (including Flavobacterium,

Alcaligenes, and **Staphylococcus**) in white water in paper

manuf. with min. inhibitory concn. of 1.5 mg/L, vs. 5.0 and 4.2 mg/L, for I and II by themselves, resp. I 5, II 5, diethylene glycol monomethyl ether 85, and nonylphenol-ethylene oxide adduct 5 wt.% were mixed to give a soln.

IT 139076-71-4 139110-27-3
(industrial microbicide, synergistic)

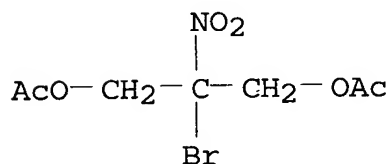
RN 139076-71-4 HCA

CN 1,3-Propanediol, 2-bromo-2-nitro-, diacetate (ester), mixt. with
(2-bromo-2-nitroethenyl)benzene (9CI) (CA INDEX NAME)

CM 1

CRN 34564-38-0

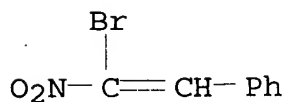
CMF C7 H10 Br N O6



CM 2

CRN 7166-19-0

CMF C8 H6 Br N O2



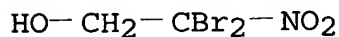
RN 139110-27-3 HCA

CN 1,3-Propanediol, 2-bromo-2-nitro-, diacetate (ester), mixt. with
(2-bromo-2-nitroethenyl)benzene and 2,2-dibromo-2-nitroethanol (9CI)
(CA INDEX NAME)

CM 1

CRN 69094-18-4

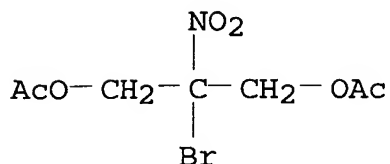
CMF C2 H3 Br2 N O3



CM 2

CRN 34564-38-0

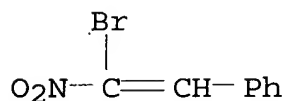
CMF C7 H10 Br N O6



CM 3

CRN 7166-19-0

CMF C8 H6 Br N O2



IC ICM A01N033-18

CC 5-2 (Agrochemical Bioregulators)

Section cross-reference(s): 43

ST **microbicide** industrial bromonitrostyrene
 bromonitrodiacetoxyp propane synergism; bromonitroethanol
 bromonitrostyrene synergistic industrial **microbicide**;
 paper manuf **microbicide** bromonitrostyrene
 bromonitroethanol

IT Paper

(manuf. of, **microbicides** contg. bromonitrostyrene and
 bromonitrodiacetoxyp propane and/or dibromonitroethanol for)

IT **Bactericides, Disinfectants, and Antiseptics****Fungicides and Fungistats**

(synergistic, contg. bromonitrostyrene and
 bromonitrodiacetoxyp propane and/or dibromonitroethanol)

IT 139076-71-4 139076-72-5 139110-27-3

(industrial **microbicide**, synergistic)

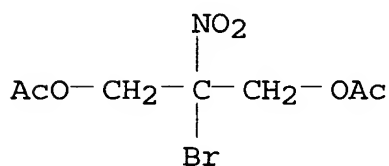
L32 ANSWER 39 OF 52 HCA COPYRIGHT 2005 ACS on STN

116:53650 Industrial **microbicides** containing isophthalonitrile
 derivatives. Hirashima, Hidenori; Ito, Yosuke; Yoshida, Mamoru (SDS
 Biotech K. K., Japan; Katayama Chemical, Inc.). Jpn. Kokai Tokkyo
 Koho JP 03130204 A2 19910604 Heisei, 5 pp. (Japanese).
 CODEN: JKXXAF. APPLICATION: JP 1989-269781 19891016.

AB **Microbicides** contain (1) 5-chloro-2,4,6-
 trifluoroisophthalonitrile (I) and/or 5-chloro-2,4-difluoro-6-

methoxyisophthalonitrile, and (2) .gtoreq.1 synergist selected from the group comprising methylenebisthiocyanate, 2,2-dibromo-3-nitrilopropionamide, and 2-bromo-2-nitro-1,3-diacetoxyp propane. The **microbicide** is effective at 17-37.degree. and is esp. useful in water at pH 7-8 in paper industry and in cooling water systems of various industries. Thus, I 10, methylenebisthiocyanate 10, and propylenecarbonate 80 parts were formulated for an industrial **microbicide**.

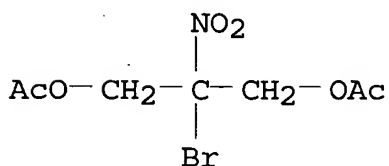
IT 34564-38-0
 (microbicides contg., industrial, synergistic)
 RN 34564-38-0 HCA
 CN 1,3-Propanediol, 2-bromo-2-nitro-, diacetate (ester) (9CI) (CA INDEX NAME)



IT 138520-76-0 138520-79-3
 (synergistic **microbicide**, industrial)
 RN 138520-76-0 HCA
 CN 1,3-Benzenedicarbonitrile, 5-chloro-2,4,6-trifluoro-, mixt. with 2-bromo-2-nitro-1,3-propanediyl diacetate (9CI) (CA INDEX NAME)

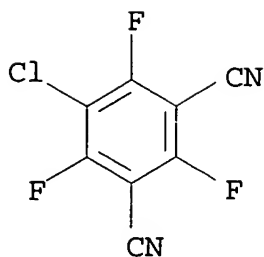
CM 1

CRN 34564-38-0
 CMF C7 H10 Br N O6



CM 2

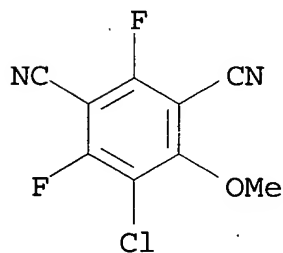
CRN 1897-50-3
 CMF C8 Cl F3 N2



RN 138520-79-3 HCA
 CN 1,3-Benzenedicarbonitrile, 5-chloro-2,4-difluoro-6-methoxy-, mixt.
 with 2-bromo-2-nitro-1,3-propanediyl diacetate (9CI) (CA INDEX
 NAME)

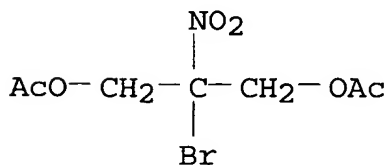
CM 1

CRN 104581-68-2
 CMF C9 H3 Cl F2 N2 O



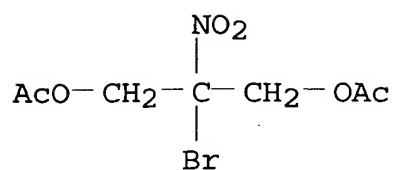
CM 2

CRN 34564-38-0
 CMF C7 H10 Br N O6



IC ICM A01N037-34
 CC 5-2 (Agrochemical Bioregulators)
 ST **microbicide** isophthalonitrile deriv synergism; paper manuf
microbicide isophthalonitrile deriv

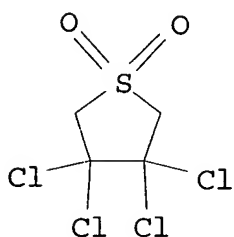
- IT Paper
(manuf. of, isophthalonitrile deriv.-contg. **microbicide** for)
- IT **Bactericides, Disinfectants, and Antiseptics**
Fungicides and Fungistats
(industrial, synergistic, isophthalonitrile deriv.-contg.)
- IT 1897-50-3, 5-Chloro-2,4,6-trifluoroisophthalonitrile 6317-18-6,
Methylenebisthiocyanate 10222-01-2, 2,2-Dibromo-3-
nitrilopropionamide **34564-38-0** 104581-68-2
(**microbicides** contg., industrial, synergistic)
- IT 138520-74-8 138520-75-9 **138520-76-0** 138520-77-1
138520-78-2 **138520-79-3**
(synergistic **microbicide**, industrial)
- L32 ANSWER 40 OF 52 HCA COPYRIGHT 2005 ACS on STN
115:273443 Synergistic industrial **microbicides** containing
3,3,4,4-tetrachlorotetrahydrothiophene 1,1-dioxide and
sterilization with them. Hirashima, Hidenori; Ito, Yosuke;
Katayama, Sakae (Katayama Chemical, Inc., Japan). Jpn. Kokai Tokkyo
Koho JP 03083902 A2 **19910409** Heisei, 7 pp. (Japanese).
CODEN: JKXXAF. APPLICATION: JP 1989-219205 19890825.
- AB 3,3,4,4-Tetrachlorotetrahydrothiophene 1,1-dioxide (I) and
N-4-dihydroxy-.alpha.-oxobenzeneethanimidoyl chloride (II) and/or
2-bromo-2-nitro-1,3-diacetoxyp propane are added to industrial
materials to show synergistic **microbicidal** effect even in
the presence of SO32-. I-II (1:1) mixt. inhibited **Bacillus**
, Pseudomonas, and Flavobacterium sp. in white water [pH 5.0, contg.
35 ppm reducing substances (as SO32- conversion)] with min.
inhibitory concn. 7.0 ppm, vs. 30 ppm and 45 ppm, for I and II
themselves, resp.
- IT **137602-04-1 137602-05-2**
(industrial **bactericides** and **fungicides**
contg., synergistic)
- RN 137602-04-1 HCA
- CN 1,3-Propanediol, 2-bromo-2-nitro-, diacetate (ester), mixt. with
3,3,4,4-tetrachlorotetrahydrothiophene 1,1-dioxide (9CI) (CA INDEX
NAME)
- CM 1
- CRN 34564-38-0
CMF C7 H10 Br N O6



CM 2

CRN 3737-41-5

CMF C4 H4 Cl4 O2 S



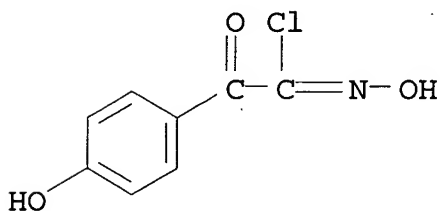
RN 137602-05-2 HCA

CN Benzeneethanimidoyl chloride, N,4-dihydroxy-.alpha.-oxo-, mixt. with
2-bromo-2-nitro-1,3-propanediyl diacetate and 3,3,4,4-
tetrachlorotetrahydrothiophene 1,1-dioxide (9CI) (CA INDEX NAME)

CM 1

CRN 34911-46-1

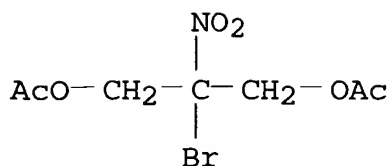
CMF C8 H6 Cl N O3



CM 2

CRN 34564-38-0

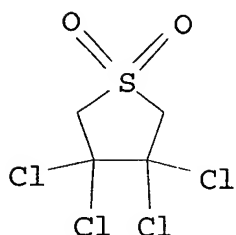
CMF C7 H10 Br N O6



CM 3

CRN 3737-41-5

CMF C4 H4 Cl4 O2 S



IC ICM A01N043-10

CC 5-2 (Agrochemical Bioregulators)

Section cross-reference(s): 43

ST industrial **microbicide** thiophene benzeneethaneimide synergism; acetoxyp propane thiophene synergism industrial **microbicide**; chlorothiophene **microbicide** synergism paper manuf

IT Paper

(manuf. of, **bactericides** and **fungicides** contg. tetrachlorotetrahydrothiophene dioxide for, synergistic)

IT **Bactericides, Disinfectants, and Antiseptics****Fungicides and Fungistats**

(industrial, synergistic, contg. tetrachlorotetrahydrothiophene dioxide)

IT 137602-03-0 137602-04-1 137602-05-2

(industrial **bactericides** and **fungicides** contg., synergistic)

IT 14265-45-3, Sulfite

(water contg., industrial **bactericides** and **fungicides** contg. tetrachlorotetrahydrothiophene dioxide for, synergistic)

L32 ANSWER 41 OF 52 HCA COPYRIGHT 2005 ACS on STN

115:3165 Synergistic industrial **microbicides** (**microbiostatics**) containing 2-bromo-2-nitro-1,3-

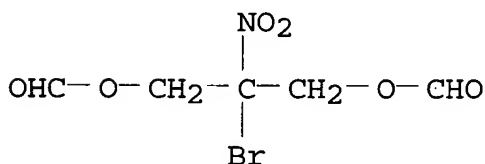
diformyloxypropane. Hirashima, Hidenori; Ito, Yosuke; Katayama, Sakae (Katayama Chemical, Inc., Japan). Jpn. Kokai Tokkyo Koho JP 03014501 A2 19910123 Heisei, 8 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1989-147947 19890609.

- AB Synergisitic industrial **microbicides** (**microbiostatics**), which show strong activity at a lower temp. as well as a higher temp., contain 2-bromo-2-nitro-1,3-diformyloxypropane (I) and 4,5-dichloro-1,2-dithiol-3-one (II) or 2,2-dibromo-3-nitrilopropionamide (III) as active ingredients. Industrial materials are treated with I and II or III for **microbe** control. I-II (5:1) mixt. at 20 mg/L effectively controlled *Pseudomonas*, *Bacillus*, *Alcaligenes*, *Klebsiella*, etc. at 15.degree. and 35.degree., vs. less effect for I and II themselves.
- IT 127069-87-8 134264-77-0
(industrial **microbicides** contg., synergisitic)
- RN 127069-87-8 HCA
- CN 3H-1,2-Dithiol-3-one, 4,5-dichloro-, mixt. with 2-bromo-2-nitro-1,3-propanediyl diformate (ester) (9CI) (CA INDEX NAME)

CM 1

CRN 80658-59-9

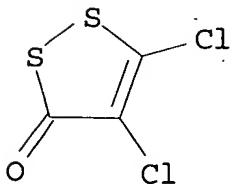
CMF C5 H6 Br N O6



CM 2

CRN 1192-52-5

CMF C3 Cl2 O S2



RN 134264-77-0 HCA

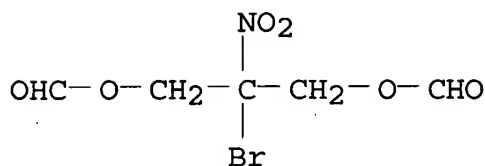
CN Acetamide, 2,2-dibromo-2-cyano-, mixt. with 2-bromo-2-nitro-1,3-

propanediyl diformate (9CI) (CA INDEX NAME)

CM 1

CRN 80658-59-9

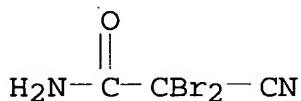
CMF C5 H6 Br N O6



CM 2

CRN 10222-01-2

CMF C3 H2 Br2 N2 O



IC ICM A01N037-12

ICS A61L002-16

ICI A01N037-12, A01N035-06

CC 5-2 (Agrochemical Bioregulators)

Section cross-reference(s): 43

ST synergism **microbicide** propane dithiolone industrial;
 propionamide propane **microbicide** synergism industrial;
 paper manuf **microbicide** propane dithiolone

IT Paper

(manuf. of, **microbicides** contg.

boromonitrodi(formyloxy)propane and dichlorodithiolone or
 dibromonitrilopropionamide for, synergistic)

IT **Bactericides, Disinfectants, and Antiseptics****Fungicides and Fungistats**

(industrial, synergistic, contg. boromonitrodi(formyloxy)propane
 and dichlorodithiolone or dibromonitrilopropionamide)

IT 127069-87-8 134264-77-0

(industrial **microbicides** contg., synergistic)

L32 ANSWER 42 OF 52 HCA COPYRIGHT 2005 ACS on STN

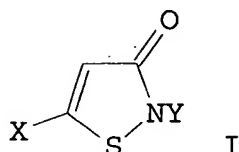
114:201753 Aqueous stabilized isothiazolinone antiseptic or

antifungal agents, for polymer emulsions.. Ito, Yosuke;

Sano, Yoichi; Tsuji, Katsuji; Katayama, Sakae (Katayama Chemical,

Inc., Japan). Eur. Pat. Appl. EP 398795 A2 19901122, 21 pp. DESIGNATED STATES: R: DE, FR, GB, IT, NL. (English). CODEN: EPXXDW. APPLICATION: EP 1990-401278 19900515. PRIORITY: JP 1989-125370 19890517.

GI



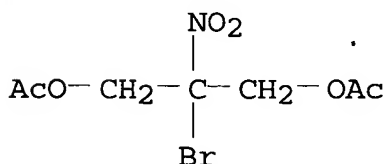
AB Synthetic polymer emulsions (e.g. NBR latex, SBR latex or acrylic resin) are rendered antiseptic or **antifungal** by treatment with an aq. isothiazolinone (I; X = H, halo; Y = alkyl) formulation, stabilized with a nitrobromo or cyanobromo compd. X1Y1Y2CBr (X1 = nitro or cyano; Y1,2 = Br, NO2, cyano, aminocarbonyl, Br-, CN-, or OH-substituted lower alkyl, etc.). A mixt. contg. 2-methyl-5-chloro-1,2-isothiazolin-3-one and 2-methyl-1,2-isothiazolin-3-one (9:1 by wt.) 6.0, glycol solvent 93.97, Br2(NO2)CCH(OH)CH3 0.03, and water 100 parts by wt. ensured stability (.gtoreq.60 days at 40.degree.) for SBR latex (pH 7.9), SBR latex (pH 8.6), and acrylic resin emulsions (pH 7.6).

IT 34564-38-0 80658-59-9

(isothiazolinone **microbicides** stabilized by, for polymer emulsions)

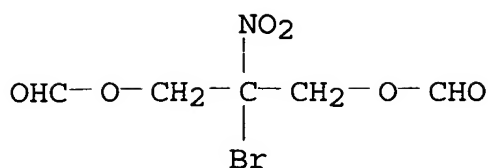
RN 34564-38-0 HCA

CN 1,3-Propanediol, 2-bromo-2-nitro-, diacetate (ester) (9CI) (CA INDEX NAME)



RN 80658-59-9 HCA

CN 1,3-Propanediol, 2-bromo-2-nitro-, diformate (ester) (9CI) (CA INDEX NAME)



- IC ICM A01N025-22
ICS A01N043-80
- ICI A01N043-80, A01N047-02, A01N043-32, A01N037-34, A01N037-12, A01N037-00
- CC 5-2 (Agrochemical Bioregulators)
- ST antiseptic **antifungal** polymer stabilized isothiazolinone; nitrobromo cyanobromo compd isothiazolinone **microbicide**
- IT Polymers, biological studies
(emulsion, isothiazolinone stabilized by bromonitro- or cyanobromo-compds. as **microbicide** for)
- IT **Bactericides, Disinfectants, and Antiseptics**
Fungicides and Fungistats
(industrial, isothiazolinone stabilized by bromonitro- or cyanobromo-compds., for polymer emulsions)
- IT 52-51-7 464-10-8, Tribromonitromethane 3425-99-8 4554-16-9
7166-19-0 7559-37-7 7559-38-8 10222-01-2 22013-79-2
22013-80-5 30007-47-7 **34564-38-0** 35691-65-7
53607-31-1 53607-60-6 53983-00-9 69094-18-4 **80658-59-9**
133346-10-8
(isothiazolinone **microbicides** stabilized by, for polymer emulsions)
- IT 2682-20-4 26172-55-4
(**microbicide**, stabilized by bromonitro- or cyanobromo-compds., for polymer emulsions)
- L32 ANSWER 43 OF 52 HCA COPYRIGHT 2005 ACS on STN
- 112:212459 A **microbicidal/microbiostatic** composition for industrial use. Katayama, Sakae; Ito, Yosuke; Hirashima, Hidenori (Katayama Chemical Works Co., Ltd., Japan; Yoshitomi Pharmaceutical Industries, Ltd.). Eur. Pat. Appl. EP 338440 A1 **19891025**, 16 pp. DESIGNATED STATES: R: DE, FR, GB, SE. (English). CODEN: EPXXDW. APPLICATION: EP 1989-106667 19890414. PRIORITY: JP 1988-96523 19880418.
- AB A compn. which can exhibit sufficient **microbicidal/microbiostatic** action in a smaller amt. and can maintain its effect even at low temps. was prepd. contg. a nitrobromopropane deriv. and 4,5-dichloro-1,2-dithiol-3-one (I). The compn. is used for industrial uses, e.g., papermaking process waters, textile oils, antifouling coatings, etc. Thus, mixts. of 2-bromo-2-nitro-1,3-diacetyloxypropane or 2-bromo-2-nitro-1,3-diformyloxypropane (7.5

mg/L) and 15 mg/L I showed very great synergistic effects against *Pseudomonas aeruginosa*, *Aspergillus niger*, *Gliocladium virens* and *Rhodotorula rubula*, as compared to sep. components. Their effects were maintained even the temp. dropped from 35 to 15.degree. in white water of papermaking process. Solvents for the compn. are claimed.

IT 127069-86-7 127069-87-8

(microbicidal and microbiostatic effect on,
in industrial effluents, synergistic)

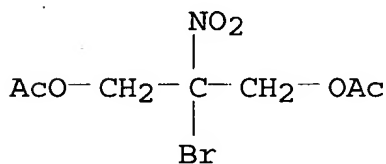
RN 127069-86-7 HCA

CN 3H-1,2-Dithiol-3-one, 4,5-dichloro-, mixt. with 2-bromo-2-nitro-1,3-propanediyl diacetate (9CI) (CA INDEX NAME)

CM 1

CRN 34564-38-0

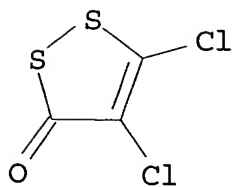
CMF C7 H10 Br N O6



CM 2

CRN .1192-52-5

CMF C3 Cl2 O S2



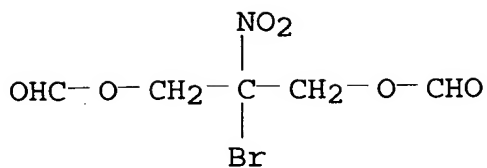
RN 127069-87-8 HCA

CN 3H-1,2-Dithiol-3-one, 4,5-dichloro-, mixt. with 2-bromo-2-nitro-1,3-propanediyl diformate (ester) (9CI) (CA INDEX NAME)

CM 1

CRN 80658-59-9

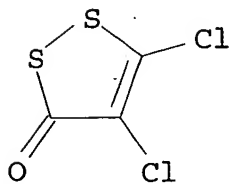
CMF C5 H6 Br N O6



CM 2

CRN 1192-52-5

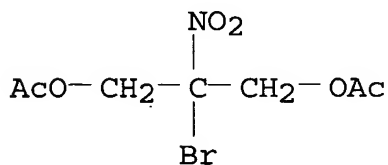
CMF C3 Cl2 O S2



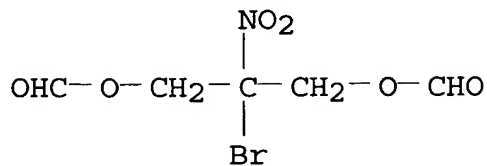
IT 34564-38-0 80658-59-9

(microbicidal and microbiostatic effects of,
in industrial effluents)

RN 34564-38-0 HCA

CN 1,3-Propanediol, 2-bromo-2-nitro-, diacetate (ester) (9CI) (CA
INDEX NAME)

RN 80658-59-9 HCA

CN 1,3-Propanediol, 2-bromo-2-nitro-, diformate (ester) (9CI) (CA
INDEX NAME)

IC ICM A01N043-26

ICI A01N043-26, A01N037-12

- CC 5-2 (Agrochemical Bioregulators)
Section cross-reference(s): 43
- ST papermaking water **bactericide** nitrobromopropane
chlorodithiolone
- IT Pulp, cellulose
(manuf. of, effluents from, **microbiocides** for,
nitrobromopropane derivs. and dichlorodithiolone as)
- IT Kerosine
(**microbicidal** compns. contg. nitrobromopropane and
dichlorodithiolone contg.)
- IT Hydrocarbon oils
(**microbicidal** compns. of nitrobromopropane and
dichlorodithiolone contg.)
- IT Waste solids
Wastewater
(**microbicides** for, contg. nitrobromopropane derivs. and
dichlorodithiolone)
- IT Coating materials
(**microbicides** for, contg. nitrobromopropane derivs. and
dichlorodithiolones)
- IT Textiles
(oil, **microbicides** for, contg. nitrobromopropane
derivs. and dichlorodithiolones)
- IT Coating materials
(antifouling, **microbicides** for, contg.
nitrobromopropane derivs. and dichlorodithiolones)
- IT **Microbicidal and microbiostatic action**
(**bactericidal**, of nitrobromopropane derivs. and
dichlorodithiolone, synergistic)
- IT **Microbicidal and microbiostatic action**
(**fungicidal**, of nitrobromopropane derivs. and
dichlorodithiolone, synergistic)
- IT Surfactants
(nonionic, **microbicidal** compns. of nitrobromopropane
and dichlorodithiolone contg.)
- IT Lubricating oils
(spindle oils, **microbicidal** compns. of
nitrobromopropane and dichlorodithiolone contg.)
- IT **Bactericides, Disinfectants, and Antiseptics**
(synergistic, nitrobromopropane deriv.-dichlorodithiolone mixts.
as)
- IT **Fungicides and Fungistats**
(synergistic, nitrobromopropane derivs. and dichlorodithiolone
mixts.)
- IT 127069-86-7 127069-87-8
(**microbicidal** and **microbiostatic** effect on,
in industrial effluents, synergistic)
- IT 1192-52-5, 4,5-Dichloro-1,2-dithiol-3-one 34564-38-0

80658-59-9

(**microbicidal** and **microbiostatic** effects of,
in industrial effluents)

IT 79-20-9, Methyl acetate 109-60-4, Propyl acetate 111-15-9,
2-Ethoxyethyl acetate 141-78-6, Ethyl acetate, biological studies
32665-19-3

(**microbicidal** compns. of nitropropylpropane and
dichlorodithiolone contg.)

IT 68-12-2, Dimethylformamide, biological studies 108-32-7, Propylene
carbonate 111-46-6, biological studies 111-77-3, Diethylene
glycol monomethyl ether 4435-53-4, 3-Methoxybutyl acetate

(nitropropylpropane derivs. and dichlorodithiolone
bactericidal compn. storage stability in)

IT 9004-34-6P

(pulp, manuf. of, effluents from, **microbiocides** for,
nitropropylpropane derivs. and dichlorodithiolone as)

L32 ANSWER 44 OF 52 HCA COPYRIGHT 2005 ACS on STN

112:193767 A **microbicidal/microbistatic** composition.

Katayama, Sakae; Ito, Yosuke; Hirashima, Hidenori (Katayama
Chemical, Inc., Japan). Eur. Pat. Appl. EP 338439 A1

19891025, 16 pp. DESIGNATED STATES: R: DE, FR, GB, SE.

(English). CODEN: EPXXDW. APPLICATION: EP 1989-106665 19890414.

PRIORITY: JP 1988-96523 19880418.

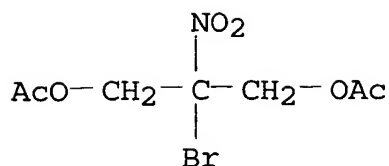
AB Combination of nitropropylpropane derivs. with 2,2-dibromo-3-
nitrilopropionamide (I) produced a synergistic effect against
bacteria and/or **fungi** of industrial processes,
e.g., papermaking process water, cooling water, sludges, textile
oils, etc. Thus, combinations of 2-bromo-2-nitro-1,3-
diacetyloxypropane or 2-bromo-2-nitro-1,3-diformylpropane (7.5 mg/L)
and I (15 mg/L) had a **microbicidal** effect of .gtoreq.99.9%
against *Pseudomonas aeruginosa* or *Staphylococcus aureus*.
The **microbicidal** effect of these combinations was .
maintained even if the temp. dropped from 35 to 15.degree.. The
microbicidal mixts. contain org. solvents and nonionic
surfactants.

IT 34564-38-0 80658-59-9

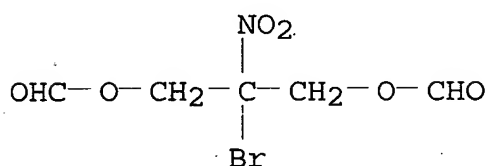
(**microbicidal** and **microbistatic** activity of,
in industrial effluents)

RN 34564-38-0 HCA

CN 1,3-Propanediol, 2-bromo-2-nitro-, diacetate (ester) (9CI) (CA
INDEX NAME)



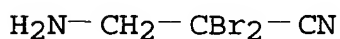
RN 80658-59-9 HCA
 CN 1,3-Propanediol, 2-bromo-2-nitro-, diformate (ester) (9CI) (CA INDEX NAME)



IT 126840-67-3 126840-68-4
 (microbicidal and microbistatic activity of,
 in industrial effluents, synergistic)
 RN 126840-67-3 HCA
 CN Propanenitrile, 3-amino-2,2-dibromo-, mixt. with
 2-bromo-2-nitro-1,3-propanediyl diformate (ester) (9CI) (CA INDEX NAME)

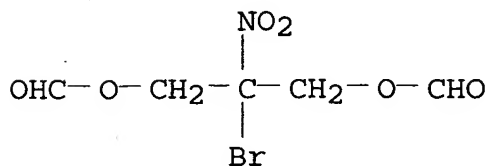
CM 1

CRN 126840-66-2
 CMF C3 H4 Br2 N2



CM 2

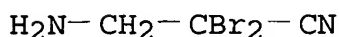
CRN 80658-59-9
 CMF C5 H6 Br N O6



RN 126840-68-4 HCA
 CN Propanenitrile, 3-amino-2,2-dibromo-, mixt. with
 2-bromo-2-nitro-1,3-propanediyl diacetate (9CI) (CA INDEX NAME)

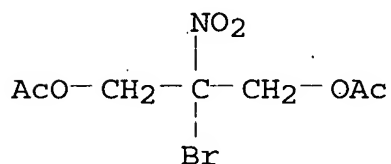
CM 1

CRN 126840-66-2
 CMF C3 H4 Br2 N2



CM 2

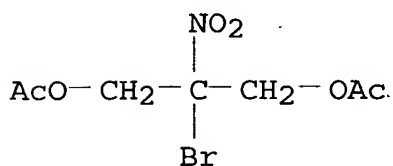
CRN 34564-38-0
 CMF C7 H10 Br N O6



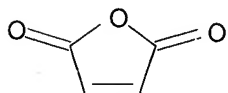
IC ICM A01N037-34
 ICI A01N037-34, A01N037-12
 CC 5-2 (Agrochemical Bioregulators)
 ST **microbicide** nitrobromopropane bromonitrilopropionamide;
 papermaking water **microbicide**
 IT Aspergillus niger
 Gliocladium virens
 Pseudomonas aeruginosa
 Rhodotorula rubra
Staphylococcus aureus
 (control of, by synergistic combinations of nitrobromopropane
 derivs. with dibromonitrilopropionamide)
 IT Pulp, cellulose
 (manuf. of, white water of, **microbicides** for, contg.
 nitrobromopropane deriv. and dibromonitrilopropionamide)
 IT Coating materials
 Latex
 Sizes
 Slimes and Sludges
 Textiles
 Wastewater
 (**microbiocides** for, contg. nitrobromopropane derivs.
 and dibromonitrilopropionamide, synergistic)

- IT **Microbicidal and microbiostatic action**
(of nitropropylpropane derivs. and dibromonitrilopropionamide combinations)
- IT Lubricating oils
(cutting oils, **microbiocides** for, contg. nitropropylpropane derivs. and dibromonitrilopropionamide, synergistic)
- IT Surfactants
(nonionic, nitropropylpropane derivs.-dibromonitrilopropionamide combinations contg., **microbicidal-microbistatic** activity of)
- IT **Bactericides, Disinfectants, and Antiseptics**
Fungicides and Fungistats
(synergistic, nitropropylpropane deriv.-dibromonitrilopropionamide combinations)
- IT 10222-01-2, 2,2-Dibromo-3-nitrilopropionamide 34564-38-0
80658-59-9
(**microbicidal and microbistatic** activity of, in industrial effluents)
- IT 126840-67-3 126840-68-4
(**microbicidal and microbistatic** activity of, in industrial effluents, synergistic)
- IT 79-20-9, Methyl acetate 109-60-4, Propyl acetate 111-15-9
141-78-6, Ethyl acetate, biological studies 32665-19-3
(nitropropylpropane derivs.-dibromonitrilopropionamide biocide contg., **microbicidal-microbistatic** activity of)
- IT 9004-34-6P
(pulp, manuf. of, white water of, **microbiocides** for, contg. nitropropylpropane deriv. and dibromonitrilopropionamide)
- L32 ANSWER 45 OF 52 HCA COPYRIGHT 2005 ACS on STN
- 112:114179 Industrial **microbiocides** and synergistic compositions containing acid anhydrides.. Ito, Yosuke; Tsuji, Katsuji; Katayama, Sakae (Katayama Chemical Works Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 01221302 A2 19890904 Heisei, 13 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1988-270483 19881026. PRIORITY: JP 1987-271027 19871026.
- AB **Microbiocides** contain an acid anhydride R1CO2COR2 [R1,R2 = (halo- or Ph-substituted) alkyl or alkenyl, (alkyl-substituted) Ph, pyridyl; R1R2 = (substituted) C2,3 hydrocarbylene] as an active ingredient. Synergistic **microbiocides** contain the above anhydride and .gtoreq.1 alkylenebisthiocyanate, propionamide, halogenated acetate ester, 1,2-dithiol-3-one deriv., aliph. nitro alc., and isothiazolone. The **microbiocides** are useful in paper manuf., and for latex, glue, cooling water, paints, etc. Maleic anhydride at 15 mg/mL controlled slime in paper-manuf. white water.

IT 125651-60-7
 (synergistic industrial **microbicide**)
 RN 125651-60-7 HCA
 CN 2,5-Furandione, mixt. with 2-bromo-2-nitro-1,3-propanediyl diacetate
 (9CI) (CA INDEX NAME)
 CM 1
 CRN 34564-38-0
 CMF C7 H10 Br N O6



CM 2
 CRN 108-31-6
 CMF C4 H2 O3



IC ICM A01N037-14
 ICS A01N037-18; A01N043-26; A01N043-80; A01N047-48
 ICI A01N037-14, A01N033-20; A01N037-14, A01N037-02; A01N037-14,
 A01N035-02; A01N037-18, A01N037-14; A01N043-26, A01N037-14;
 A01N043-80, A01N037-14; A01N047-48, A01N037-14
 CC 5-2 (Agrochemical Bioregulators)
 Section cross-reference(s): 43
 ST acid anhydride industrial **microbicide**; synergism
microbicide acid anhydride
 IT **Bactericides, Disinfectants, and Antiseptics**
Fungicides and Fungistats
 (industrial, acid anhydrides)
 IT **Bactericides, Disinfectants, and Antiseptics**
Fungicides and Fungistats
 (industrial, synergistic, acid anhydride-contg. compns.)
 IT 85-42-7, 1,2-Cyclohexanedicarboxylic anhydride 85-43-8 85-44-9,
 1,3-Isobenzofurandione 93-97-0, Benzoic anhydride 106-31-0
 108-24-7, Acetic anhydride 108-30-5, Succinic anhydride,
 biological studies 108-31-6, 2,5-Furandione, biological studies

108-55-4, Glutaric anhydride 117-08-8, Tetrachlorophthalic anhydride 123-62-6, Propionic anhydride 552-30-7 616-02-4, Citraconic anhydride 623-66-5, Octanoic anhydride 626-27-7 632-79-1, Tetrabromophthalic anhydride 826-62-0 1122-17-4, Dichloromaleic anhydride 2051-49-2, Hexanoic anhydride 2082-59-9, Valeric anhydride 2082-76-0, Decanoic anhydride 2170-03-8, Itaconic anhydride 3261-87-8, Thiodiglycolic anhydride 4124-31-6, Trichloroacetic anhydride 4480-83-5, Diglycolic anhydride 5926-95-4, Glutaconic anhydride 25134-21-8, Methyl-5-(norbornene-2,3-dicarboxylic anhydride 25550-51-0, Methyl-1,2-cyclohexanedicarboxylic anhydride 26590-20-5, Methyltetrahydrophthalic anhydride (industrial **microbicide**)

IT 125651-52-7 125651-53-8 125651-54-9 125651-56-1 125651-57-2
125651-58-3 125651-59-4 **125651-60-7** 125651-61-8
125651-62-9
(synergistic industrial **microbicide**)

L32 ANSWER 46 OF 52 HCA COPYRIGHT 2005 ACS on STN

109:216090 Thin-layer chromatographic studies on derivatives of the biocide 2-bromo-2-nitropropane. Klemm, D.; Hartmann, M.; Stein, A.; Schnabelrauch, M.; Spangenberg, S.; Gross, M.; Klepel, M.; Jumar, A. (Sekt. Chem., Friedrich-Schiller-Univ. Jena, Jena, 6900, Ger. Dem. Rep.). Journal of Chromatography, 438(1), 122-5 (German) 1988. CODEN: JOCRAM. ISSN: 0021-9673.

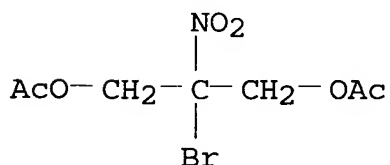
AB The TLC retention values (Rf) of 2-bromo-2-nitropropane (BNP), and 2-bromo-2-nitropropane-1,3-diol and its mono- and diesters on Silufol-UV254 plates are given. The eluents were mixts. of benzene and 96% EtOH. The spots were detected by either spraying with KI in MeOH or a methanolic soln. of p-phenylenediamine followed by UV irradiation for 2-3 min. The technique was applied for the semiquant. detn. of purity of BNP derivs.

IT 34564-38-0 55490-05-6 65520-32-3
117552-09-7 117552-13-3 117552-15-5
117552-16-6

(TLC of, as bromonitropropane **antimicrobial** impurity)

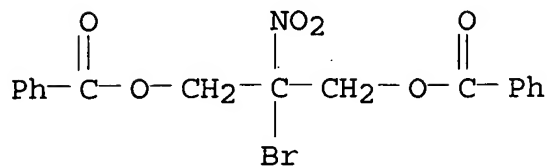
RN 34564-38-0 HCA

CN 1,3-Propanediol, 2-bromo-2-nitro-, diacetate (ester) (9CI) (CA INDEX NAME)



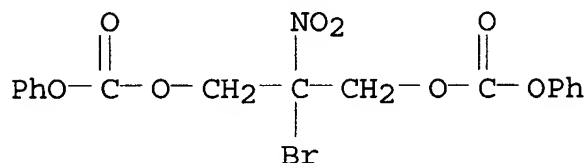
RN 55490-05-6 HCA

CN 1,3-Propanediol, 2-bromo-2-nitro-, dibenzoate (ester) (9CI) (CA INDEX NAME)



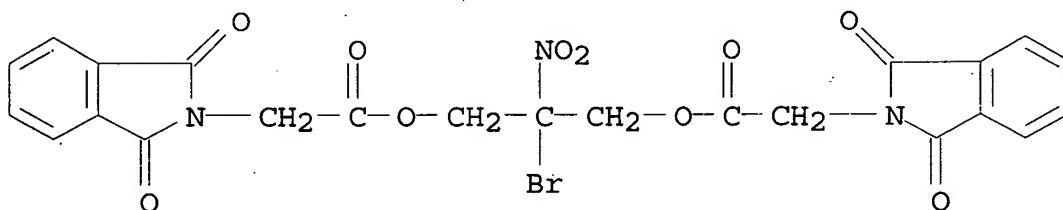
RN 65520-32-3 HCA

CN Carbonic acid, 2-bromo-2-nitro-1,3-propanediyl diphenyl ester (9CI) (CA INDEX NAME)



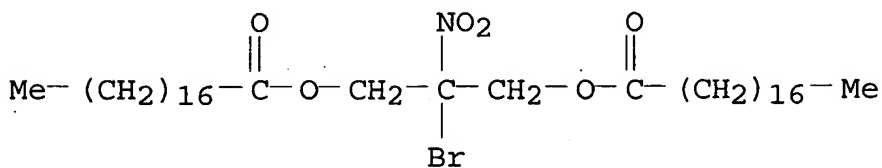
RN 117552-09-7 HCA

CN 2H-Isoindole-2-acetic acid, 1,3-dihydro-1,3-dioxo-, 2-bromo-2-nitro-1,3-propanediyl ester (9CI) (CA INDEX NAME)



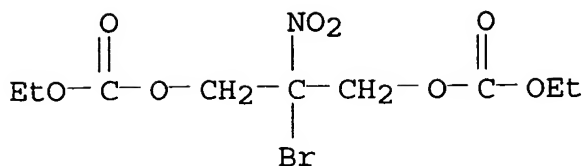
RN 117552-13-3 HCA

CN Octadecanoic acid, 2-bromo-2-nitro-1,3-propanediyl ester (9CI) (CA INDEX NAME)



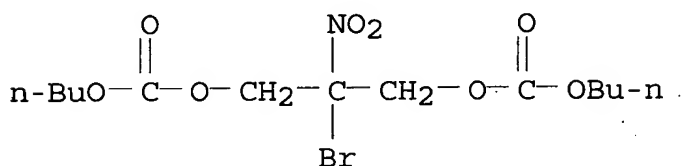
RN 117552-15-5 HCA

CN Carbonic acid, 2-bromo-2-nitro-1,3-propanediyl diethyl ester (9CI) (CA INDEX NAME)



RN 117552-16-6 HCA

CN Carbonic acid, 2-bromo-2-nitro-1,3-propanediyl dibutyl ester (9CI)
(CA INDEX NAME)

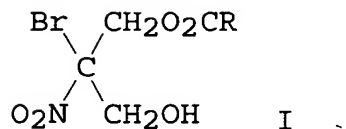


CC 64-3 (Pharmaceutical Analysis)
Section cross-reference(s): 80

IT 52-51-7 34564-38-0 55490-05-6 65520-32-3
116763-23-6 117552-09-7 117552-11-1 117552-12-2
117552-13-3 117552-14-4 117552-15-5
117552-16-6
(TLC of, as bromonitropropane antimicrobial impurity)

L32 ANSWER 47 OF 52 HCA COPYRIGHT 2005 ACS on STN
109:148902 Process for preparing 2-bromo-2-nitropropane-1,3-diol
derivatives. Klemm, Dieter; Hartmann, Manfred; Stein, Armin;
Spangenberg, Stephan; Geschwend, Guenter; Gross, Manfred; Klepel,
Manfred; Seewald, Ingrid; Jumar, Alfred (VEB Fahlberg-List, Ger.
Dem. Rep.). Ger. (East) DD 254383 A1 19880224, 3 pp.
(German). CODEN: GEXXA8. APPLICATION: DD 1986-297207 19861208.

GI



AB Title compds. I [R = (substituted) Ph or PhCH₂], useful as
microbicides (no data), are prep'd. by reaction of
2-bromo-2-nitropropane-1,3-diol with the appropriate acyl halide.

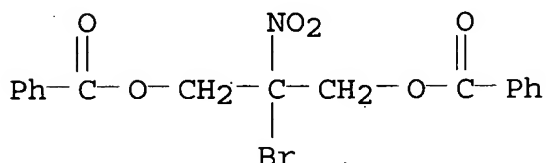
Esterification of 2-bromo-2-nitropropane-1,3-diol with PhCOCl in Et₂O in the presence of pyridine gave 62% I (R = Ph) and a small amt. of the diester.

IT 55490-05-6P

(prepn. of)

RN 55490-05-6 HCA

CN 1,3-Propanediol, 2-bromo-2-nitro-, dibenzoate (ester) (9CI) (CA INDEX NAME)



IC ICM C07C069-78

ICS C07C069-614; C07C069-003; C07C079-18

CC 23-17 (Aliphatic Compounds)

Section cross-reference(s): 1, 5

ST bromonitropropanediol ester prepn **microbicide**

IT 52-51-7P 55490-05-6P 116763-23-6P

(prepn. of)

L32 ANSWER 48 OF 52 HCA COPYRIGHT 2005 ACS on STN

96:68312 1,3-Diformyloxy-2-bromo-2-nitropropane and its use in **antimicrobial** applications. Buckley, Alan John (Imperial Chemical Industries Ltd., UK). Eur. Pat. Appl. EP 34684 A1 19810902, 11 pp. DESIGNATED STATES: R: BE, CH, DE, FR, GB, IT, NL, SE. (English). CODEN: EPXXDW. APPLICATION: EP 1980-304603 19801218. PRIORITY: GB 1980-5801 19800220.

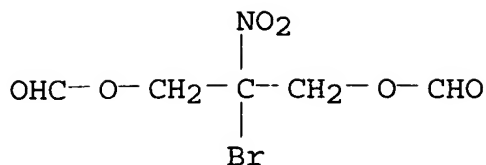
AB The reaction of (HOCH₂)₂C(NO₂)Br with formic alkanolic anhydrides yielded (HCO₂CH₂)₂C(NO₂)Br, which exhibited **bactericidal** activity. Thus, a mixt. of HCO₂H and Ac₂O was kept 1 h at 40-5, cooled to 25.degree., and treated with pyridine and (HOCH₂)₂C(NO₂)Br, and the new mixt. was kept at .ltoreq.40.degree. and then cooled to give (HCO₂CH₂)₂C(NO₂)Br.

IT 80658-59-9P

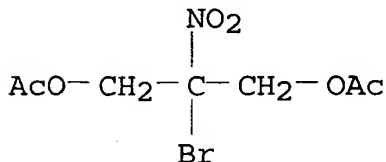
(prepn. and **bactericidal** activity of)

RN 80658-59-9 HCA

CN 1,3-Propanediol, 2-bromo-2-nitro-, diformate (ester) (9CI) (CA INDEX NAME)



- IC C07C079-18; C07C076-02; A01N037-12; C02F001-50; D21H003-08
 CC 23-7 (Aliphatic Compounds)
 Section cross-reference(s): 63
 ST propanediol bromo nitro diformate; bromonitropropanediol diformate
 prepn **bactericide**; nitrobromopropanediol diformate prepn
bactericide
 IT **Bactericides, Disinfectants, and Antiseptics**
 (bromonitropropanediol diformate)
 IT **80658-59-9P**
 (prepn. and **bactericidal** activity of)
- L32 ANSWER 49 OF 52 HCA COPYRIGHT 2005 ACS on STN
 96:2144 Protection of aqueous media against attack by microorganisms.
 Buckley, Alan John; Singer, Michael (Imperial Chemical Industries
 Ltd., UK). Eur. Pat. Appl. EP 36055 A2 **19810923**, 13 pp.
 DESIGNATED STATES: R: BE, CH, DE, FR, GB, IT, NL, SE. (English).
 CODEN: EPXXDW. APPLICATION: EP 1980-304602 19801218. PRIORITY: GB
 1980-3232 19800131.
- AB 1,3-diacetoxy-2-bromo-2-nitropropane (I) [**34564-38-0**] is
 a **microbiocide** for aq. systems, such as cooling waters and
 paper-mill liquors. Thus, 100 ppm I almost totally killed
 Pseudomonas aeruginosa in vitro within 2 h, whereas the std.
 2-bromo-2-nitropropane-1,3-diol di-propionyl ester was much less
 active.
- IT **34564-38-0P**
 (prepn. and **microbicidal** activity of)
- RN 34564-38-0 HCA
 CN 1,3-Propanediol, 2-bromo-2-nitro-, diacetate (ester) (9CI) (CA
 INDEX NAME)



- IC A01N037-12; C02F001-50; D21C003-00
 CC 5-2 (Agrochemical Bioregulators)
 Section cross-reference(s): 23

ST acetoxybromonitropropane **microbicide** water
 IT **Bactericides, Disinfectants, and Antiseptics**
Fungicides and Fungistats
 (diacetoxymonitropropane)

IT **34564-38-0P**
 (prepn. and **microbicidal** activity of)

L32 ANSWER 50 OF 52 HCA COPYRIGHT 2005 ACS on STN

91:91195 Biocides derived from 2-bromo-2-nitropropane-1,3-diol.

Buckley, Alan John; Singer, Michael (Imperial Chemical Industries Ltd., UK). Ger. Offen. DE 2847374 **19790510**, 18 pp.

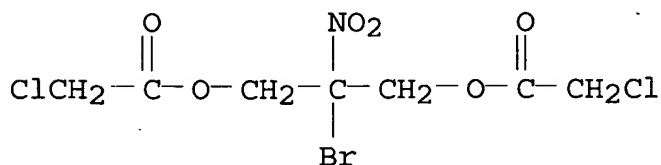
(German). CODEN: GWXXBX. APPLICATION: DE 1978-2847374 19781031.

AB RZCO₂CH₂CBr(NO₂)CH₂O₂CZR [R = (un)substituted C1-18 alkyl, alkenyl, cycloalkyl, aralkyl, alkaryl, aryl; Z = bond, NH], useful as **bactericides** and **fungicides** for cutting oil emulsions and emulsion points (extensive data tabulated), were prepd. by 2 methods. Thus, treating HOCH₂CBr(NO₂)CH₂OH in PhMe with Me₂CHNCO and NEt₃ in the presence of Bu₂Zn[O₂C(CH₂)₁₀Me]₂ catalyst at 22-30.degree., finally at 60.degree. 90 min gave (Me₂CHNHCO₂CH₂)₂C(NO₂)Br.

IT **71078-60-9P 71078-61-0P 71078-62-1P**
71078-63-2P 71078-64-3P
 (prepn. and **bactericidal** and **fungicidal** activity of)

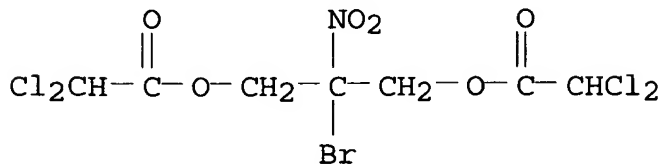
RN 71078-60-9 HCA

CN Acetic acid, chloro-, 2-bromo-2-nitro-1,3-propanediyl ester (9CI)
 (CA INDEX NAME)



RN 71078-61-0 HCA

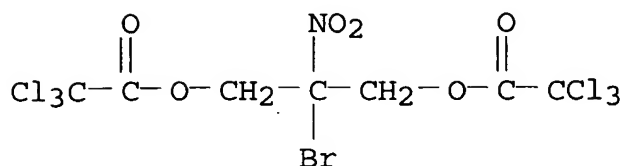
CN Acetic acid, dichloro-, 2-bromo-2-nitro-1,3-propanediyl ester (9CI)
 (CA INDEX NAME)



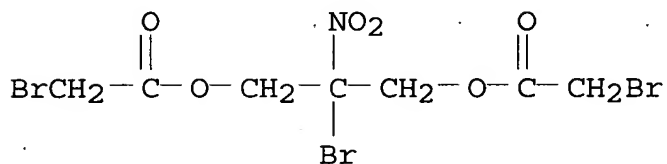
RN 71078-62-1 HCA

CN Acetic acid, trichloro-, 2-bromo-2-nitro-1,3-propanediyl ester (9CI)

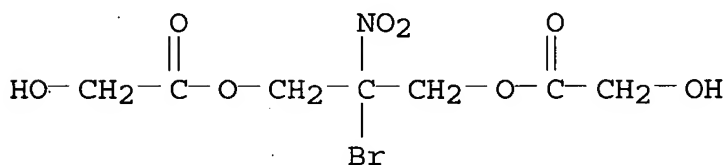
(CA INDEX NAME)



RN 71078-63-2 HCA

CN Acetic acid, bromo-, 2-bromo-2-nitro-1,3-propanediyl ester (9CI)
(CA INDEX NAME)

RN 71078-64-3 HCA

CN Acetic acid, hydroxy-, 2-bromo-2-nitro-1,3-propanediyl ester (9CI)
(CA INDEX NAME)

IC C07C125-06; C07C079-18; C02B003-06; C09D005-14

CC 23-20 (Aliphatic Compounds)

Section cross-reference(s): 5, 25, 42

ST propanediyl carbamate acetate **microbicide** prepnIT **Bactericides, Disinfectants** and Antiseptics**Fungicides and Fungistats**

(bromonitropropanediol carbamates and acetates)

IT Lubricating oil additives

(bromonitropropanediol carbamates and acetates as
bactericides and **fungicides** for cutting oil
emulsions)

IT Coating materials

(emulsion, bromonitropropanediol carbamates and acetates as
fungicides and **bactericides** for)

IT 24302-96-3P 71078-60-9P 71078-61-0P

71078-62-1P 71078-63-2P 71078-64-3P

71131-94-7P

(prepn. and **bactericidal** and **fungicidal**
activity of)

L32 ANSWER 51 OF 52 HCA COPYRIGHT 2005 ACS on STN

82:665 Synthesis and **antimicrobial** activity of aliphatic nitro compounds. Clark, Nigel G.; Croshaw, Betty; Leggetter, Brian E.; Spooner, David F. (Res. Dep., Boots Co., Ltd., Nottingham, UK). Journal of Medicinal Chemistry, 17(9), 977-81 (English) 1974 . CODEN: JMCMAR. ISSN: 0022-2623.

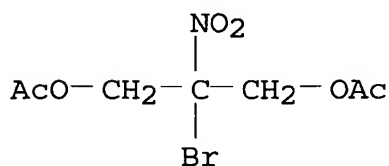
AB Several title compds. were prepd. by bromination of nitroalkanes, nitration of .alpha.-bromo esters, condensation of aldehydes with nitroalkanes, or treatment of an .alpha.-nitroalkene with NaOH followed by chlorination. The nitroalkanes were inactive in vitro, while .alpha.-bromination enhanced activity. Unhalogenated nitro alcs. had low **antimicrobial** activity, chloro analogs were more active, and introduction of bromine adjacent to the nitro group greatly enhanced activity. 2-Bromo-2-nitropropane-1,3-diol [HOCH2CBr(NO2)CH2OH] [52-51-7] inhibits a broad range of **bacteria** including Pseudomonas aeruginosa. Structure-activity relations and mode of action were discussed.

IT 34564-38-0P 53607-71-9P 53607-72-0P
53607-73-1P

(prepn. of)

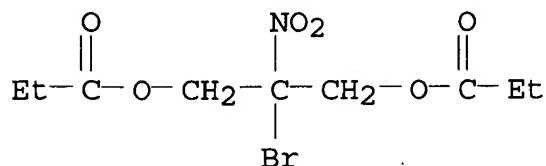
RN 34564-38-0 HCA

CN 1,3-Propanediol, 2-bromo-2-nitro-, diacetate (ester) (9CI) (CA INDEX NAME)



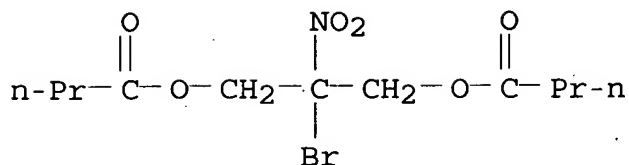
RN 53607-71-9 HCA

CN 1,3-Propanediol, 2-bromo-2-nitro-, dipropionate (ester) (9CI) (CA INDEX NAME)

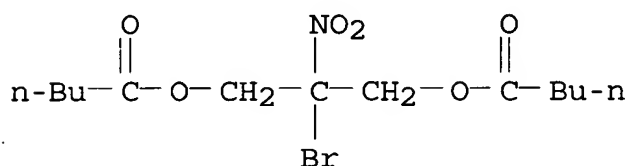


RN 53607-72-0 HCA

CN Butanoic acid, 2-bromo-2-nitro-1,3-propanediyl ester (9CI) (CA INDEX NAME)



RN 53607-73-1 HCA

CN Pentanoic acid, 2-bromo-2-nitro-1,3-propanediyl ester (9CI) (CA
INDEX NAME)

CC 3-2 (Biochemical Interactions)

Section cross-reference(s): 23

ST **bactericide** nitroalkane bromo chloro;**antibacterial** halogenonitroalkane deriv safetyIT **Bactericides, Disinfectants** and Antiseptics

(aliph. halogenonitro compds.)

IT Molecular structure-biological activity relationship

(antimicrobial, of aliph. halogenonitro compds.)

IT 52-51-7 3156-73-8 5437-60-5 14527-05-0 14527-06-1

14548-57-3 15509-51-0 22632-02-6 22632-04-8 22916-80-9

24403-04-1 32818-72-7 53607-25-3 53607-26-4 53607-27-5

53607-28-6 53607-29-7 53607-30-0 53607-31-1 53607-32-2

53607-52-6

(bactericide)

IT 3017-54-7P 5029-32-3P 14527-05-0P 14527-06-1P 15509-51-0P

22632-02-6P 22632-04-8P **34564-38-0P** 52239-30-2P

53607-27-5P 53607-28-6P 53607-31-1P 53607-32-2P 53607-33-3P

53607-34-4P 53607-35-5P 53607-36-6P 53607-37-7P 53607-38-8P

53607-39-9P 53607-40-2P 53607-41-3P 53607-42-4P 53607-43-5P

53607-44-6P 53607-45-7P 53607-46-8P 53607-47-9P 53607-48-0P

53607-49-1P 53607-50-4P 53607-51-5P 53607-52-6P 53607-53-7P

53607-54-8P 53607-55-9P 53607-56-0P 53607-57-1P 53607-58-2P

53607-59-3P 53607-60-6P 53607-61-7P 53607-62-8P 53607-63-9P

53607-64-0P 53607-65-1P 53607-66-2P 53607-67-3P 53607-68-4P

53607-69-5P 53607-70-8P **53607-71-9P 53607-72-0P****53607-73-1P** 53607-74-2P 53607-75-3P 53607-76-4P

53607-77-5P 53639-90-0P 53639-91-1P 53667-35-9P 53667-38-2P

53667-39-3P 53667-40-6P 53667-41-7P

(prepn. of)

L32 ANSWER 52 OF 52 HCA COPYRIGHT 2005 ACS on STN

76:115170 Degeneration-resistant starch. Murayama, Yu; Igarashi, Choshi; Nakamura, Michihiko; Shirahata, Sumio (Permachem Asia, Ltd.). Jpn. Tokkyo Koho JP 46012938 B4 19710403 Showa, 2 pp. (Japanese). CODEN: JAXXAD. APPLICATION: JP 19660120.

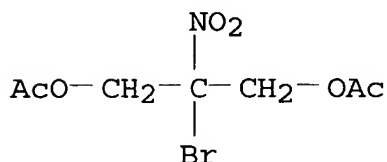
AB 1-Hydroxy-2-bromo-2-nitro-3-caproyloxybutane (I) [34564-37-9], 2-bromo-2-nitro-1,3-diacetoxyp propane [34564-38-0], 1,1-dichloro-1-nitro-2-benzoyloxyethane [34564-39-1], and 2-fluoro-2-nitro-1-crotonoyloxypropane [34599-10-5] are antiseptics for starch [9005-25-8]. Raw starch (water content 55%) contg. 10 ppm of the antiseptics was fresh after 90 days at 30.deg..

IT 34564-38-0

(bactericides, starch contg., degeneration-resistant)

RN 34564-38-0 HCA

CN 1,3-Propanediol, 2-bromo-2-nitro-, diacetate (ester) (9CI) (CA INDEX NAME)



IC C13I

CC 44 (Industrial Carbohydrates)

IT Bactericides, Disinfectants and Antiseptics
(halo alkanes, starch contg., degeneration-resistant)

IT 34564-37-9 34564-38-0 34564-39-1 34599-10-5
(bactericides, starch contg., degeneration-resistant)

IT 9005-25-8, uses and miscellaneous
(bactericides-contg., degeneration-resistant)

=> d 134 1-19 cbib abs hitstr hitind

L34 ANSWER 1 OF 19 HCA COPYRIGHT 2005 ACS on STN

139:175189 Antimicrobial compositions for industries. Kubota, Takao; Tanaka, Shoji; Sugiyama, Takayuki (Takeda Chemical Industries, Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2003238318 A2 20030827, 7 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2002-39487 20020218.

AB A synergistic antimicrobial compn. contains 5-chloro-2-methyl-4-isothiazolin-3-one at 1 part by wt., 2-methyl-4-isothiazolin-3-one 1.05 - 30, and 2-bromo-2-nitropropane-1,3-diol 1.25 - 30 parts by wt. in diethylene glycol or/and propylene glycol as solvents. This compn. is found effective

against bacteria, **fungi**, yeast, and algae, in a variety of industries, dealing with pulp, machine oils, casein, starch, coating materials, synthetic rubber latex, ink, films, cement, etc.

IT 114974-41-3

(industrial synergistic antimicrobial compns. contg.)

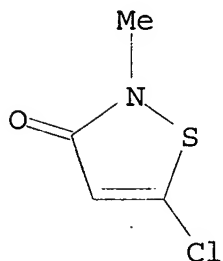
RN 114974-41-3 HCA

CN 3(2H)-Isothiazolone, 5-chloro-2-methyl-, mixt. with
2-bromo-2-nitro-1,3-propanediol and 2-methyl-3(2H)-isothiazolone
(9CI) (CA INDEX NAME)

CM 1

CRN 26172-55-4

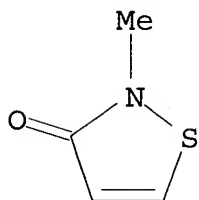
CMF C4 H4 Cl N O S



CM 2

CRN 2682-20-4

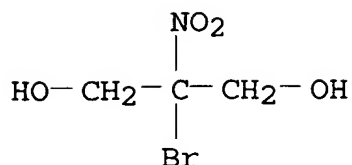
CMF C4 H5 N O S



CM 3

CRN 52-51-7

CMF C3 H6 Br N O4

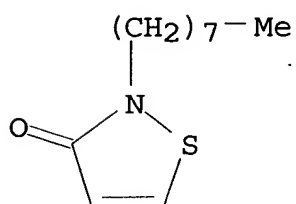


- IC ICM A01N043-80
ICS A01N033-20; C02F001-50
- CC 5-2 (Agrochemical Bioregulators)
- ST synergistic **antimicrobial** compn isothiazolinone
bromonitropropanediol deriv
- IT Algicides
Antibacterial agents
Fungicides
(industrial synergistic **antimicrobial** compns. contg.)
- IT **Antimicrobial** agents
(industrial synergistic compns. contg.)
- IT **114974-41-3**
(industrial synergistic **antimicrobial** compns. contg.)
- IT 57-55-6, Propylene glycol, biological studies 111-46-6, Diethylene glycol, biological studies
(industrial synergistic **antimicrobial** compns. contg.)
- L34 ANSWER 2 OF 19 HCA COPYRIGHT 2005 ACS on STN
139:80697 Industrial **antimicrobial compositions**
containing 2-octyl-4-isothiazolin-3-one and 2-bromo-2-nitropropane-1,3-diol. Kubota, Takao (Takeda Chemical Industries, Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2003192507 A2 20030709, 6 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2001-395596 20011227.
- AB **Antimicrobial** compns., which show synergistic inhibition against bacteria, **fungi**, and yeast without discoloring industrial products and are stable in aq. systems, contain 2-octyl-4-isothiazolin-3-one (I), 2-bromo-2-nitropropane-1,3-diol (II), and optionally 3,3,4,4-tetrachlorotetrahydrothiophene-1,1-dioxide at I:II wt. ratio 1:5-12. Addn. of a mixt. contg. Kathon 893T 5, Myacide AS 30, and diethylene glycol 65 g to a paper-strengthening agent prevented growth of putrefactive bacteria and discoloration even after 1-mo incubation.
- IT **131442-10-9**, Kathon 893T-Myacide AS mixt.
553638-14-5
(industrial synergistic microbicides esp. for papermaking additives contg. octylisothiazolinone, bromonitropropanediol, and optionally tetrachlorotetrahydrothiophene dioxide)
- RN 131442-10-9 HCA
- CN 3(2H)-Isothiazolone, 2-octyl-, mixt. with 2-bromo-2-nitro-1,3-propanediol (9CI) (CA INDEX NAME)

CM 1

CRN 26530-20-1

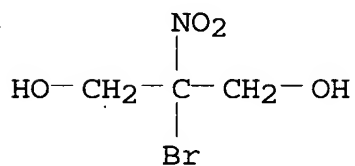
CMF C11 H19 N O S



CM 2

CRN 52-51-7

CMF C3 H6 Br N O4



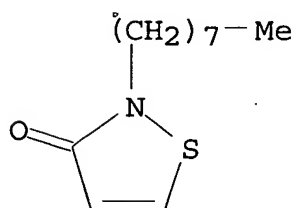
RN 553638-14-5 HCA

CN 3(2H)-Isothiazolone, 2-octyl-, mixt. with 2-bromo-2-nitro-1,3-propanediol and 3,3,4,4-tetrachlorotetrahydrothiophene 1,1-dioxide (9CI) (CA INDEX NAME)

CM 1

CRN 26530-20-1

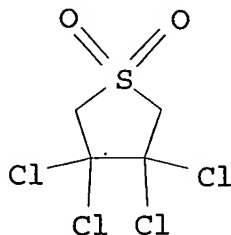
CMF C11 H19 N O S



CM 2

CRN 3737-41-5

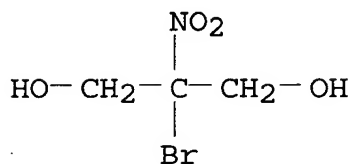
CMF C4 H4 Cl4 O2 S



CM 3

CRN 52-51-7

CMF C3 H6 Br N O4



IC ICM A01N043-80

ICS A01N033-20; A01N043-10; C02F001-50; D21H021-36

CC 5-2 (Agrochemical Bioregulators)

Section cross-reference(s): 43

ST synergistic industrial bactericide **fungicide**

octylisothiazolinone bromonitropropanediol;

chlorotetrahydrothiophene dioxide octylisothiazolinone

bromonitropropanediol industrial microbicide; papermaking additive

synergistic preservative octylisothiazolinone bromonitropropanediol

IT Antibacterial agents

Fungicides

(industrial, synergistic; industrial synergistic microbicides

esp. for papermaking additives contg. octylisothiazolinone,

bromonitropropanediol, and optionally

tetrachlorotetrahydrothiophene dioxide)

IT 131442-10-9, Kathon 893T-Myacide AS mixt.

553638-14-5

(industrial synergistic microbicides esp. for papermaking

additives contg. octylisothiazolinone, bromonitropropanediol, and

optionally tetrachlorotetrahydrothiophene dioxide)

L34 ANSWER 3 OF 19 HCA COPYRIGHT 2005 ACS on STN

138:267173 Industrial synergistic **antimicrobial** aqueous

dispersion **compositions** containing microcapsulated dithioles or 2,2-dibromo-3-nitrilopropionamide and other microbicides. Watanabe, Hirotoshi; Sato, Toshio; Goto, Shinji (API Corporation, Japan). Jpn. Kokai Tokkyo Koho JP 2003104802 A2 20030409, 8 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2001-338717 20010927.

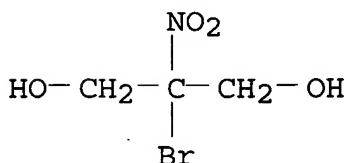
AB The compns., which have broad **antimicrobial** spectrum and show fast- and long-acting antibacterial and **antifungal** effects even in the presence of alkalies or reducing agents such as SO₃-, contain (a) microcapsules of hydrophobic solvent solns. of dithiole compds. or 2,2-dibromo-3-nitrilopropionamide using film-forming polymers and (b) .gtoreq.1 selected from 33 compds. including 2-bromo-2-nitropropane-1,3-diol(I), 5-chloro-2-methyl-4-isothiazolin-3-one, .alpha.-bromocinnamaldehyde, salicylic acid, p-hydroxybenzoic acid esters, etc. Aq. suspension contg. polyurethane microcapsules of di-Bu adipate soln. of 4,5-dichloro-1,2-dithiol-3-one and I showed excellent antibacterial effect against Pseudomonas aeruginosa in citrate buffer contg. Na₂S₂O₃.

IT 52-51-7D, 2-Bromo-2-nitropropane-1,3-diol, mixts. contg. 80966-67-2

(industrial synergistic **antimicrobial** aq. dispersion contg. microcapsulated dithiole compds. or dibromonitrilopropionamide and other microbicides)

RN 52-51-7 HCA

CN 1,3-Propanediol, 2-bromo-2-nitro- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



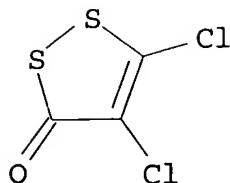
RN 80966-67-2 HCA

CN 3H-1,2-Dithiol-3-one, 4,5-dichloro-, mixt. with 2-bromo-2-nitro-1,3-propanediol (9CI) (CA INDEX NAME)

CM 1

CRN 1192-52-5

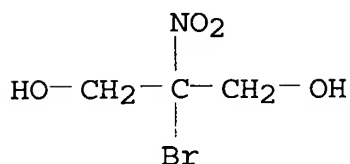
CMF C3 Cl2 O S2



CM 2

CRN 52-51-7

CMF C3 H6 Br N O4



- IC ICM A01N025-04
ICS A01N025-28; A01N033-20; A01N037-34; A01N043-26; A01N043-80
- CC 5-2 (Agrochemical Bioregulators)
Section cross-reference(s): 61
- ST dithiole microcapsule bromonitropropanol synergistic industrial bactericide **fungicide**; chlorodithiolone microcapsule benzisothiazolinone synergistic industrial microbicide; bromonitrilopropanamide microcapsule isothiazolinone synergistic industrial microbicide
- IT Aminoplasts
Polyurethanes, biological studies
(capsule wall; industrial synergistic **antimicrobial** aq. dispersion contg. microcapsulated dithiole compds. or dibromonitrilopropionamide and other microbicides)
- IT Cooling water
Pesticide formulations
(industrial synergistic **antimicrobial** aq. dispersion contg. microcapsulated dithiole compds. or dibromonitrilopropionamide and other microbicides)
- IT Antibacterial agents
Fungicides
(industrial, synergistic; industrial synergistic **antimicrobial** aq. dispersion contg. microcapsulated dithiole compds. or dibromonitrilopropionamide and other microbicides)
- IT 9003-08-1, Melamine resin

(capsule wall; industrial synergistic **antimicrobial** aq. dispersion contg. microcapsulated dithiole compds. or dibromonitrilopropionamide and other microbicides)

IT 52-51-7D, 2-Bromo-2-nitropropane-1,3-diol, mixts. contg.
 54-21-7D, Sodium salicylate, mixts. contg. 69-72-7D, Salicylic acid, mixts. contg. 88-04-0D, p-Chloro-m-xyleneol, esters, mixts. contg. 99-96-7D, p-Hydroxybenzoic acid, esters, mixts. contg. 126-06-7D, 3-Bromo-1-chloro-5,5-dimethylhydantoin, mixts. contg. 148-79-8D, 2-(4-Thiazolyl)benzimidazole, mixts. contg. 594-07-0D, Carbamodithioic acid, mixts. contg. 1897-45-6D, 2,4,5,6-Tetrachloroisophthalonitrile, mixts. contg. 2634-33-5D, 1,2-Benzisothiazolin-3-one, mixts. contg. 2682-20-4D, 2-Methyl-4-isothiazolin-3-one, mixts. contg. 3064-70-8D, Bis(trichloromethyl) sulfone, mixts. contg. 3811-73-2D, mixts. contg. 4719-04-4D, Hexahydro-1,3,5-tris-(2-hydroxyethyl)-S-triazine, mixts. contg. 5437-45-6D, Benzyl bromoacetate, mixts. contg. 5443-49-2D, .alpha. Bromocinnamaldehyde, mixts. contg. 6317-18-6D, Methylenebisithiocyanate, mixts. contg. 7647-15-6D, Sodium bromide, mixts. contg. 10222-01-2, 2,2-Dibromo-3-nitrilopropionamide 10222-01-2D, 2,2-Dibromo-3-nitrilopropionamide, mixts. contg. 13463-41-7D, Bis(2-pyridinethiol-1-oxide) zinc, mixts. contg. 16079-88-2D, 1-Bromo-3-chloro-5,5-dimethylhydantoin, mixts. contg. 20679-58-7D, mixts. contg. 26172-55-4D, 5-Chloro-2-methyl-4-isothiazolin-3-one, mixts. contg. 26530-20-1D, 2-n-Octyl-4-isothiazolin-3-one, mixts. contg. 35691-65-7D, 1,2-Dibromo-2,4-dicyanobutane, mixts. contg. 36033-21-3D, mixts. contg. 51981-68-1D, .alpha.-Chlorobenzaldoxime acetate, mixts. contg. 69094-18-4D, 2,2-Dibromo-2-nitroethanol, mixts. contg. 80966-67-2 84526-04-5 138549-22-1 138569-63-8D, mixts. contg. 161943-35-7D, mixts. contg. 215926-26-4D, mixts. contg. 503551-45-9D, mixts. contg.
 (industrial synergistic **antimicrobial** aq. dispersion contg. microcapsulated dithiole compds. or dibromonitrilopropionamide and other microbicides)

L34 ANSWER 4 OF 19 HCA COPYRIGHT 2005 ACS on STN

138:233397 Industrial synergistic **antimicrobial compositions** containing N,N'-hexamethylenebis(4-carbamoyl-1-decylpyridinium bromide). Onishi, Toshikiyo; Tanaka, Ikuya; Yoshida, Munehiro; Nanba, Akihito (Nagase Chemtex Corp., Japan; Inui Corp.). Jpn. Kokai Tokkyo Koho JP 2003081713 A2 20030319, 8 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2001-277310 20010912.

AB The compns., which show broad **antimicrobial** spectrum, contain the title compd. (I) and .gtoreq.1 selected from 1-[[[(3-iodo-2-propynyl)oxy]methoxy]-4-methoxybenzene, 2-n-octyl-4-isothiazolin-3-one (II), 2-pyridinethiol-1-oxide zinc salt, 2-bromo-2-nitro-1,3-propanediol, 5-chloro-2-methyl-4-isothiazolin-3-one, 2-methyl-4-isothiazolin-3-one,

poly(hexamethylenebiguanide) hydrochloride, 4,4-dimethyloxazolidine, and 4-(2-nitrobutyl)morpholine. MIC of 1:1 mixt. of I and II against *Chlorella pyrenoidosa* was 10 ppm, vs. 20 for I alone.

IT 501940-52-9

(industrial synergistic **antimicrobial** compns. contg. hexamethylenebis(carbamoyldecylpyridinium bromide))

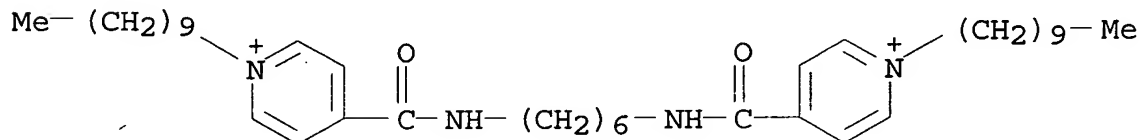
RN 501940-52-9 HCA

CN Pyridinium, 4,4'-[1,6-hexanediylbis(iminocarbonyl)]bis[1-decyl-, dibromide, mixt. with 2-bromo-2-nitro-1,3-propanediol (9CI) (CA INDEX NAME)

CM 1

CRN 190513-77-0

CMF C38 H64 N4 O2 . 2 Br

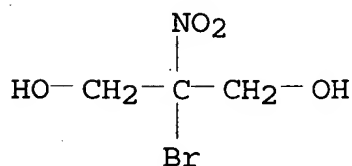


● 2 Br⁻

CM 2

CRN 52-51-7

CMF C3 H6 Br N O4



IC ICM A01N043-40

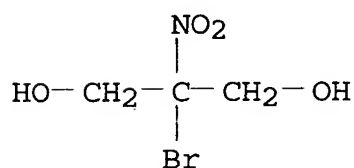
ICS A01N043-40; A01N031-16; A01N033-20; A01N043-76; A01N043-80; A01N043-84; A01N047-44

CC 5-2 (Agrochemical Bioregulators)

ST hexamethylenebiscarbamoyldecylpyridinium bromide synergistic industrial microbicide; bactericide synergistic industrial isothiazolinone bispyridinium compd; **fungicide** synergistic industrial pyrithione bispyridinium compd; algicide isothiazolinone

- bispyridinium compd
- IT Algicides
(industrial synergistic **antimicrobial** compns. contg.
hexamethylenebis(carbamoyldecylpyridinium bromide))
- IT Antibacterial agents
Fungicides
(industrial, synergistic; industrial synergistic
antimicrobial compns. contg.
hexamethylenebis(carbamoyldecylpyridinium bromide))
- IT **Antimicrobial** agents
(synergistic; industrial synergistic **antimicrobial**
compns. contg. hexamethylenebis(carbamoyldecylpyridinium
bromide))
- IT 190513-77-0D, mixts. contg. 501940-45-0 501940-47-2
501940-49-4 501940-52-9 501940-53-0 501940-55-2
501940-57-4 501940-58-5 501940-60-9
(industrial synergistic **antimicrobial** compns. contg.
hexamethylenebis(carbamoyldecylpyridinium bromide))
- L34 ANSWER 5 OF 19 HCA COPYRIGHT 2005 ACS on STN
- 138:175873 Synergistic microbicidal **compositions**. Concannon,
Shauna Michelle; Day, Michael John; Duccini, Yves (Rohm and Haas
Company, USA; Associated Octel Company Limited). PCT Int. Appl. WO
2003013491 A1 20030220, 24 pp. DESIGNATED STATES: W: AE, AG, AL,
AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ,
DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL,
IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG,
SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM,
ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG,
CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML,
MR, NE, NL, PT, SE, SN, TD, TG, TR. (English). CODEN: PIXXD2.
APPLICATION: WO 2002-US23497 20020724. PRIORITY: GB 2001-18515
20010730; GB 2001-18516 20010730; GB 2001-31120 20011220.
- AB **Antimicrobial** compns. based on the synergistic combination
of an amino acid deriv. having at least one chiral center and
selected com. microbicides are disclosed. Particularly preferred
are combinations of ethylenediaminedisuccinic acid and salts
together with 5-chloro-2-methyl-3-isothiazolone,
2-methyl-3-isothiazolone, 2-n-octyl-3-isothiazolone,
benzisothiazolone, 2-bromo-2-nitro-1,3-propanediol,
imidazolidinylurea, 1,3-dimethylol-5,5-dimethylhydantoin,
phenoxyethanol or Me parahydroxybenzoate, that provide enhanced
antimicrobial efficacy at a combined active ingredient level
lower than that of the combined individual amino acid deriv. and
com. microbicide effective use levels. The microbicides,
2-methyl-3-isothiazolone and S,S-ethylenediaminedisuccinic acid
sodium salt, showed synergistic activity against *Pseudomonas putida*.

IT 52-51-7, 2-Bromo-2-nitro-1,3-propanediol
 (synergistic microbicidal compns.)
 RN 52-51-7 HCA
 CN 1,3-Propanediol, 2-bromo-2-nitro- (6CI, 7CI, 8CI, 9CI) (CA INDEX
 NAME)



IC ICM A61K031-05
 ICS A61K031-075; A61K031-195; A61K031-235; A61K031-415; A61K031-425
 CC 63-6 (Pharmaceuticals)
 Section cross-reference(s): 1, 10
 IT Antibacterial agents
Fungicides
 Pseudomonas aeruginosa
 Pseudomonas putida
 (synergistic microbicidal compns.)
 IT **Antimicrobial agents**
 (synergistic; synergistic microbicidal compns.)
 IT 52-51-7, 2-Bromo-2-nitro-1,3-propanediol 99-76-3, Methyl
 p-hydroxybenzoate 122-99-6, Phenoxyethanol 2634-33-5,
 Benzisothiazolone 2682-20-4, 2-Methyl-3-isothiazolone 6440-58-0,
 1,3-Dimethylol-5,5-dimethylhydantoin 7408-20-0, Iminodisuccinic
 acid 20846-91-7, s,s-Ethylenediaminedisuccinic acid 26172-55-4,
 5-Chloro-2-methyl-3-isothiazolone 26530-20-1, 2-n-Octyl-3-
 isothiazolone 29578-05-0 39236-46-9, Imidazolidinyl urea
 159410-64-7 194604-51-8
 (synergistic microbicidal compns.)

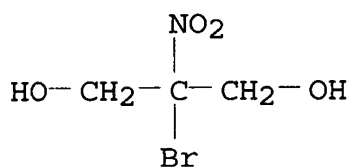
L34 ANSWER 6 OF 19 HCA COPYRIGHT 2005 ACS on STN

138:142229 Deodorant gel **compositions** containing antibacterial
 and **antifungal** agents. Morikazu, Keiji; Narisada, Naoyuki
 (S. T. Chemical Co. Ltd., Japan). Jpn. Kokai Tokkyo Koho JP
 2003024424 A2 20030128, 7 pp. (Japanese). CODEN: JKXXAF.
 APPLICATION: JP 2001-210729 20010711.

AB The compns. contain adsorbents dispersed in gels and metal
 hydroxides (M12+)1-x(M22+)x(OH)2 (M1 = Mg, Ca; M2 = Cu, Zn; 0.0001
 .ltoreq. x < 0.9), metal oxides (M12+)1-x(M22+)xO (M1, M2, x = same
 as above), amorphous Al silicates Mym+Omy/2.Al2O3.nSiO2.aH2O (Mm+ =
 Ag+, Cu2+, Zn2+; m = 1, 2; 0 < y .ltoreq. 2; m = 1-3; 4 < n < 15; 0
 .ltoreq. a), and/or solid solns. bZnO.Al2O3 (b = 20-30). A
 deodorant gel contg. carrageenan 2.5, propylene glycol 5.0,
 activated C 2.0, Seabio Z 24 (bZnO.Al2O3; b = 20-30) 0.5, EtOH 5.0,

H₂O 84.5, and NaCl 0.5 g showed complete control of *Aspergillus niger*, *Penicillium citrinum*, *Cladosporium cladosporioides*, *Escherichia coli*, *Staphylococcus aureus*, and *Pseudomonas aeruginosa* and removed NH₃ and H₂S from air.

- IT 52-51-7, 2-Bromo-2-nitropropane-1,3-diol
(deodorant gel compns. contg. adsorbents and antibacterial and **antifungal** agents)
- RN 52-51-7 HCA
- CN 1,3-Propanediol, 2-bromo-2-nitro- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



- IC ICM A61L009-01
- ICS A01N031-14; A01N059-00; A01N059-06; A01N059-16; A01N059-20; A61L009-16; B01D053-02; B01J020-10; B01J020-18; B01J020-20
- CC 62-5 (Essential Oils and Cosmetics)
Section cross-reference(s): 5, 59
- ST deodorant gel mixed oxide antibacterial **antifungal**; zinc aluminum oxide **antimicrobial** deodorant gel; activated carbon adsorbent deodorant antibacterial hydroxide; amorphous aluminum silicate **antifungal** deodorant gel
- IT Adsorbents
Air fresheners
Antibacterial agents
Deodorants
Fungicides
Gelation agents
Hydrogels
(deodorant gel compns. contg. adsorbents and antibacterial and **antifungal** agents)
- IT Hydroxides (inorganic)
Oxides (inorganic), biological studies
(deodorant gel compns. contg. adsorbents and antibacterial and **antifungal** agents)
- IT Charcoal
Silica gel, biological studies
Zeolites (synthetic), biological studies
(deodorant gel compns. contg. adsorbents and antibacterial and **antifungal** agents)
- IT Air purification
(deodorization; deodorant gel compns. contg. adsorbents and antibacterial and **antifungal** agents)

- IT Gelatins, biological studies
(gelling agent; deodorant gel compns. contg. adsorbents and antibacterial and **antifungal** agents)
- IT 193884-03-6, Copper magnesium oxide ($\text{Cu}_0.07\text{Mg}_0.93\text{O}$)
(Seabio CO; deodorant gel compns. contg. adsorbents and antibacterial and **antifungal** agents)
- IT 491869-17-1, Seabio KU 2
(Seabio KU 2; deodorant gel compns. contg. adsorbents and antibacterial and **antifungal** agents)
- IT 153327-67-4, Calcium zinc hydroxide ($\text{Ca}_0.95\text{Zn}_0.05(\text{OH})_2$)
(Seabio Z; deodorant gel compns. contg. adsorbents and antibacterial and **antifungal** agents)
- IT 473312-41-3, Magnesium zinc oxide ($\text{Mg}_0.93\text{Zn}_0.07\text{O}$)
(Seabio ZO; deodorant gel compns. contg. adsorbents and antibacterial and **antifungal** agents)
- IT 7440-44-0, Activated carbon, biological studies
(activated; deodorant gel compns. contg. adsorbents and antibacterial and **antifungal** agents)
- IT 52-51-7, 2-Bromo-2-nitropropane-1,3-diol 79-07-2,
2-Chloroacetamide 100-97-0, Hexamethylenetetramine, biological studies 116-25-6, 1-Methylol-5,5-dimethylhydantoin 1314-13-2,
Zinc oxide, biological studies 1317-38-0, Cupric oxide, biological studies 1344-28-1, Alumina, biological studies 4080-31-3,
1-(3-Chloroallyl)-3,5,7-triaza-1-azoniaadamantane chloride 6440-58-0 7440-22-4, Silver, biological studies 7631-86-9,
Silica, biological studies 20667-12-3, Silver oxide 37275-76-6, Aluminum zinc oxide 56539-66-3, 3-Methoxy-3-methylbutanol 491868-90-7, Seabio Z 24
(deodorant gel compns. contg. adsorbents and antibacterial and **antifungal** agents)
- IT 7664-41-7, Ammonia, processes 7783-06-4, Hydrogen sulfide, processes
(deodorant gel compns. contg. adsorbents and antibacterial and **antifungal** agents)
- IT 9000-07-1, Carrageenan 9000-30-0, Guar gum 9000-40-2, Locust bean gum 9000-69-5, Pectin 9002-18-0, Agar 9004-34-6D, Cellulose, derivs. 9005-38-3, Sodium alginate 11138-66-2, Xanthan gum 71010-52-1, Gellan gum
(gelling agent; deodorant gel compns. contg. adsorbents and antibacterial and **antifungal** agents)

L34 ANSWER 7 OF 19 HCA COPYRIGHT 2005 ACS on STN

135:253248 Long-lasting synergistic industrial **antimicrobial compositions** and their application. Sato, Wakako (Kurita Water Industries, Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2001261509 A2 20010926, 8 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2000-75948 20000317.

AB The compns. contain isothiazolones, bromoacetates, and nitroalcs. A

compn. contg. 5-chloro-2-methyl-4-isothiazolin-3-one 18, 1,4-bis(bromoacetoxy)-2-butene 1, and 2-bromo-2-nitropropane-1,3-diol 1 wt. part inhibited *Pseudomonas aeruginosa* with a min. inhibitory concn. of <0.1 mg/L 48 and 96 h after addn. of the compn.

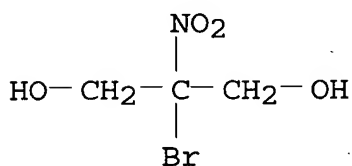
IT 52-51-7D, 2-Bromo-2-nitropropane-1,3-diol, mixts. contg.

362040-37-7 362040-44-6 362040-50-4

(long-lasting synergistic industrial **antimicrobials** contg. isothiazolones, bromoacetates, and nitroalcs.)

RN 52-51-7 HCA

CN 1,3-Propanediol, 2-bromo-2-nitro- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



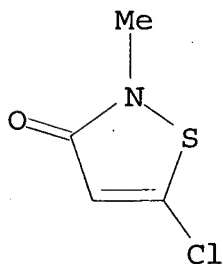
RN 362040-37-7 HCA

CN Acetic acid, bromo-, 2-butene-1,4-diyl ester, mixt. with 2-bromo-2-nitro-1,3-propanediol and 5-chloro-2-methyl-3(2H)-isothiazolone (9CI) (CA INDEX NAME)

CM 1

CRN 26172-55-4

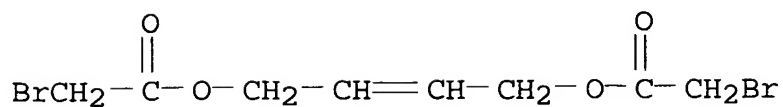
CMF C4 H4 Cl N O S



CM 2

CRN 20679-58-7

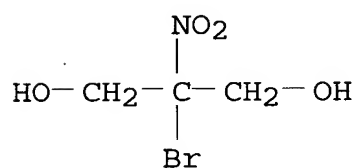
CMF C8 H10 Br2 O4



CM 3

CRN 52-51-7

CMF C3 H6 Br N O4



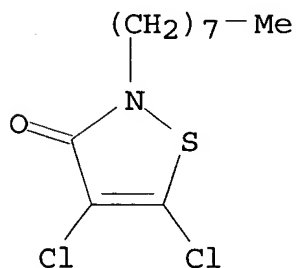
RN 362040-44-6 HCA

CN Acetic acid, bromo-, 1,2-ethanediyl ester, mixt. with
2-bromo-2-nitro-1,3-propanediol and 4,5-dichloro-2-octyl-3(2H)-
isothiazolone (9CI) (CA INDEX NAME)

CM 1.

CRN 64359-81-5

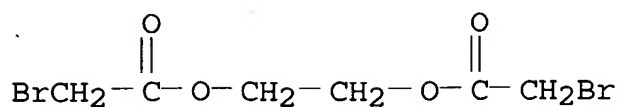
CMF C11 H17 Cl2 N O S



CM 2

CRN 3785-34-0

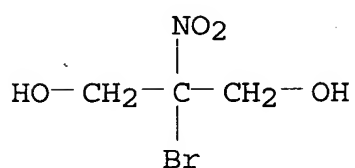
CMF C6 H8 Br2 O4



CM 3

CRN 52-51-7

CMF C3 H6 Br N O4



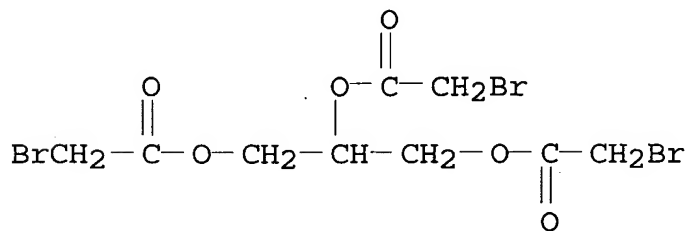
RN 362040-50-4 HCA

CN Acetic acid, bromo-, 1,2,3-propanetriyl ester, mixt. with
1,2-benzisothiazol-3(2H)-one and 2-bromo-2-nitro-1,3-propanediol
(9CI) (CA INDEX NAME)

CM 1

CRN 64503-08-8

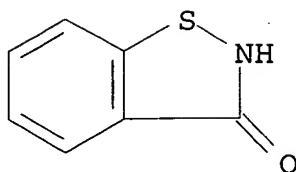
CMF C9 H11 Br3 O6



CM 2

CRN 2634-33-5

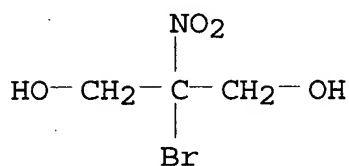
CMF C7 H5 N O S



CM 3

CRN 52-51-7

CMF C3 H6 Br N O4



- IC ICM A01N043-80
ICS A01N025-02; A01N033-20; A01N037-12
- CC 5-2 (Agrochemical Bioregulators)
Section cross-reference(s): 43
- ST isothiazolone bromoacetate nitroalc synergism industrial
microbicide; bactericide **fungicide** industrial
isothiazolone bromoacetate nitroalc
- IT Antibacterial agents
Fungicides
(industrial; long-lasting synergistic industrial
antimicrobials contg. isothiazolones, bromoacetates, and
nitroalcs.)
- IT Paper
(long-lasting synergistic industrial **antimicrobials**
contg. isothiazolones, bromoacetates, and nitroalcs. for manuf.
of)
- IT 52-51-7D, 2-Bromo-2-nitropropane-1,3-diol, mixts. contg.
2634-33-5D, 1,2-Benzisothiazol-3(2H)-one, mixts. contg.
3785-34-0D, 1,2-Bis(bromoacetoxy)ethane, mixts. contg.
20679-58-7D, 1,4-Bis(bromoacetoxy)-2-butene, mixts. contg.
26172-55-4D, 5-Chloro-2-methyl-4-isothiazolin-3-one, mixts. contg.
37102-72-0D, 1,2-Bis(bromoacetoxy)propane, mixts. contg.
64359-81-5D, 4,5-Dichloro-2-octyl-4-isothiazolin-3-one, mixts.
contg. 64503-08-8D, 1,2,3-Tris(bromoacetoxy)propane, mixts. contg.
69094-18-4D, 2,2-Dibromo-2-nitroethanol, mixts. contg.
362040-37-7 362040-41-3 362040-44-6
362040-47-9 362040-50-4

(long-lasting synergistic industrial **antimicrobials**
contg. isothiazolones, bromoacetates, and nitroalcs.)

L34 ANSWER 8 OF 19 HCA COPYRIGHT 2005 ACS on STN

134:174243 **Antimicrobial compositions** for industrial fluids containing stabilized sodium hypobromite in synergistic combinations. Cooper, Andrew J.; Dallmier, Anthony W.; Kelly, Robert F.; McCoy, William F.; Ma, Xi (Nalco Chemical Company, USA). PCT Int. Appl. WO 2001011954 A2 **20010222**, 22 pp. DESIGNATED STATES: W: AG, AU, BR, CN, DZ, IN, JP, KR, MX, MZ, NZ, SG, ZA; RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE. (English). CODEN: PIXXD2. APPLICATION: WO 2000-US20962 20000801. PRIORITY: US 1999-373288 19990812.

AB Synergistic compn. for controlling biol. growth in industrial fluids comprise stabilized sodium hypobromite and at least one compd. selected from coco alkyldimethylamine oxide, n-coco alkyltrimethylenediamine, tetra-alkyl phosphonium chloride, 7-oxabicyclo[2.2.1]heptane-2,3-dicarboxylic acid and 4,5-dichloro-2-n-octyl-4-isothiazoline-3-one.

IT **326601-28-9**

(synergistic **antimicrobial** compn. for industrial fluids
contg.)

RN 326601-28-9 HCA

CN Hypobromous acid, sodium salt, mixt. with 2-bromo-2-nitro-1,3-propanediol (9CI) (CA INDEX NAME)

CM 1

CRN 13824-96-9

CMF Br H O . Na

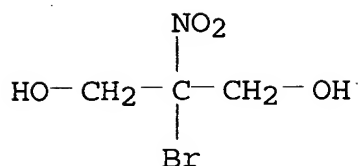
Br—OH

● Na

CM 2

CRN 52-51-7

CMF C3 H6 Br N O4



- IC ICM A01N
 CC 5-2 (Agrochemical Bioregulators)
 Section cross-reference(s): 61
 ST **antimicrobial** synergistic sodium hypobromite industrial fluid
 IT Amines, biological studies
 (N-coco alkyltrimethylenediamines, mixt. with stabilized sodium hypobromite; synergistic **antimicrobial** compn. for industrial fluids contg.)
 IT Quaternary ammonium compounds, biological studies
 (alkylbenzyltrimethyl, chlorides, mixt. with stabilized sodium hypobromite; synergistic **antimicrobial** compn. for industrial fluids contg.)
 IT Industrial process waters
 (**antimicrobial** compn. contg. stabilized sodium hypobromite in synergistic combinations for)
 IT Algae
 Bacteria (Eubacteria)
Fungi
 (**antimicrobial** compn. for industrial fluids contg. stabilized sodium hypobromite in synergistic combinations, against)
 IT Amine oxides
 (cocoalkyldimethyl, mixt. with stabilized sodium hypobromite; synergistic **antimicrobial** compn. for industrial fluids contg.)
 IT Quaternary ammonium compounds, biological studies
 (dialkyldimethyl, chlorides, mixts. with stabilized sodium hypobromite; synergistic **antimicrobial** compn. for industrial fluids contg.)
 IT Amino acids, uses
 Carboxylic acids, uses
 (sodium hypobromite stabilizer in synergistic **antimicrobial** compn. for industrial fluids)
 IT Amides, uses
 Sulfates, uses
 (sulfamates, alkali metal; sodium hypobromite stabilizer in synergistic **antimicrobial** compn. for industrial fluids)
 IT **Antimicrobial** agents
 (synergistic; **antimicrobial** compn. for industrial

fluids contg. stabilized sodium hypobromite in synergistic combinations)

- IT 74-90-8, Hydrogen cyanide, uses 463-79-6, Carbonic acid, uses 7664-38-2, Phosphoric acid, uses 7664-93-9, Sulfuric acid, uses 10043-35-3, Boric acid, uses 13845-18-6, Sodium sulfamate (sodium hypobromite stabilizer in synergistic **antimicrobial** compn. for industrial fluids)
- IT 13824-96-9D, Sodium hypobromite, stabilized, mixts. with synergistic **antimicrobials** 24567-53-1D, Phosphonium chloride, tetra-alkyl, mixt. with stabilized sodium hypobromite 30388-01-3, S-(2-Hydroxypropyl)thiomethanesulfonate-sodium hypobromite mixt. 31512-74-0, Poly(oxyethylene(dimethyliminio)ethylene(diethyliminio))ethylene dichloride, mixture with sodium hypobromite 35950-52-8, 2-(2-Bromo-2-nitroethenyl)furan-sodium hypobromite mixt.
- | | | | | |
|--------------------|-------------|-------------|-------------|-------------|
| 326601-23-4 | 326601-24-5 | 326601-26-7 | 326601-27-8 | |
| 326601-28-9 | 326601-29-0 | 326601-30-3 | 326601-31-4 | |
| 326601-32-5 | 326601-33-6 | 326601-34-7 | 326601-35-8 | 326601-36-9 |
| 326601-37-0 | 326601-38-1 | 326601-40-5 | 326601-42-7 | 326601-43-8 |
| 326601-44-9 | 326601-45-0 | 326601-46-1 | 326601-47-2 | 326601-48-3 |
| 326601-49-4 | 326601-50-7 | 326601-51-8 | 326601-52-9 | |
- (synergistic **antimicrobial** compn. for industrial fluids contg.)

L34 ANSWER 9 OF 19 HCA COPYRIGHT 2005 ACS on STN

134:143275 Microbicidal **compositions** and methods using combinations of propiconazole and N-alkyl heterocycles and salts thereof. Oppong, David; Whittemore, Marilyn S.; Ellis, M. Sheldon; Miller, Robert H.; Zhou, Xiangdong; Elmore, Michael E. (Buckman Laboratories International, Inc., USA). PCT Int. Appl. WO 2001010217 A1 **20010215**, 48 pp. DESIGNATED STATES: W: AU, BR, CA, CN, FI, JP, MX, NZ, SG, ZA; RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE. (English). CODEN: PIXXD2. APPLICATION: WO 2000-US20269 20000726. PRIORITY: US 1999-369298 19990806.

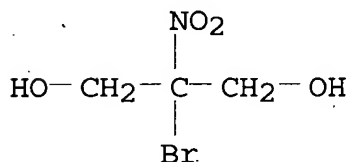
AB A method for increasing the effectiveness of the microbicide propiconazole, (RS)-1-2-[(2,4-dichlorophenyl)-2-propyl-1,3-dioxalan-2-ylmethyl]-1H-1,2,4-triazol, is described. In the method, propiconazole and a potentiator, an N-alkyl heterocyclic compd., its salt, or a mixt. thereof, are applied to a substrate or aq. system subject to the growth of microorganisms. The N-alkyl heterocyclic compd. CH₃-C_nH_{2n}-(NR) [n = 5-17; (NR) = (un)substituted ring with 4-8 members], its salt, or a mixt. thereof is applied in an amt. effective to increase the microbicidal activity of the microbicide. Microbicidal compns. are described where propiconazole and an N-alkyl heterocyclic compd., its salt, or a mixt. thereof are present in a combined amt. effective to control the growth of at least one microorganism. Methods for controlling the growth of microorganisms on various substrates and in various aq. systems are

also described. The combination of propiconazole and N-alkyl heterocyclic compd., its salt, or a mixt. thereof is particularly useful as microbicide in the leather industry, the lumber industry, the papermaking industry, the textile industry, the agricultural industry, and the coating industry, as well as in industrial process waters.

IT 52-51-7, 2-Bromo-2-nitropropane-1,3-diol
(microbicide in microbicial compns. contg. propiconazole and N-alkyl heterocycles)

RN 52-51-7 HCA

CN 1,3-Propanediol, 2-bromo-2-nitro- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



IC ICM A01N043-653

ICS A01N043-653; A01N043-84; A01N043-76; A01N043-60; A01N043-56; A01N043-50; A01N043-46; A01N043-40; A01N043-06

CC 5-2 (Agrochemical Bioregulators)

ST **antimicrobial** bactericide **fungicide** algicide
propiconazole heterocycle

IT Algicides

Antibacterial agents

Antimicrobial agents

Fungicides

(microbicial compns. contg. combinations of propiconazole and N-alkyl heterocycles)

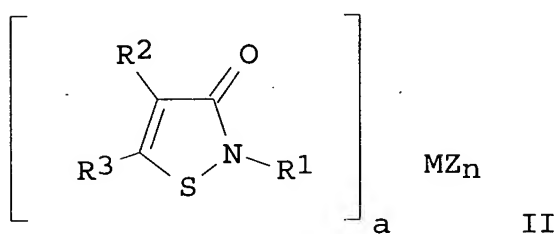
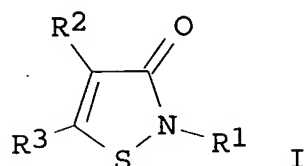
IT 52-51-7, 2-Bromo-2-nitropropane-1,3-diol 1725-82-2,
Iodopropargyl alcohol 1875-92-9D, Dimethylbenzyl ammonium
chloride, N-Alkyl 2492-26-4, Sodium 2-mercaptobenzothiazole
2634-33-5, 1,2-Benzisothiazol-3(2H)-one 2682-20-4,
2-Methyl-4-isothiazolin-3-one 3064-70-8,
Bis(trichloromethyl)sulfone 10222-01-2, 2,2-Dibromo-3-
nitrilopropionamide 25376-38-9, Tribromophenol 26172-55-4,
5-Chloro-2-methyl-4-isothiazolin-3-one 55406-53-6 129348-50-1
(microbicide in microbicial compns. contg. propiconazole and N-alkyl heterocycles)

L34 ANSWER 10 OF 19 HCA COPYRIGHT 2005 ACS on STN

134:26512 Storage-stable nonirritant industrial **antimicrobial compositions** containing isothiazolones, halonitroalcohols, and aminocarboxylic acids. Yagi, Minoru; Aoki, Tetsuya (Kurita Water Industries, Ltd., Japan). Jpn. Kokai Tokkyo Koho JP

2000351704 A2 20001219, 14 pp. (Japanese). CODEN:
JKXXAF. APPLICATION: JP 1999-161363 19990608.

GI



AB The compns. contain isothiazolones I or II (R1 = H, alkyl, alkenyl, alkynyl, aralkyl; R2, R3 = H, halo; R2R3 may form a benzene ring; M = alkali metal, alk. earth metal, heavy metal, amine cation; Z = anion; MZn = compd. having soly. sufficient for forming a complex; a = 1, 2; n = no. that the anion Z satisfies the valency of M), R4CR6(NO2)CHR5OH [R4 = H, halo, C1-5 (hydroxy)alkyl; R5 = H, C1-5 alkyl; R6 = halo], and R7NH(R8)bCHR9CO2H [R7 = H, (carboxy-substituted) C1-5 alkyl; R8 = linear or branched C1-5 alkylene; R9 = H, (un)substituted C1-5 alkyl; R7R9 may form a (OH-substituted) heterocycle; b = 0, 1]. A compn. (pH 3) contg. ZONEN-F (ethylene glycol soln. contg. 11 wt.% 5-chloro-2-methyl-4-isothiazolin-3-one and 1 wt.% 2-methyl-4-isothiazolin-3-one) 5.0, 2-bromo-2-nitro-1,3-propanediol 1.5, glycine 0.62, and H2O + H2SO4 92.88 wt.% showed no pptn. and contained 95% residual I after 1-wk storage at 60.degree..

IT 114974-41-3

(storage-stable nonirritant industrial microbicides contg. isothiazolones, halonitroalcs., and aminocarboxylic acids)

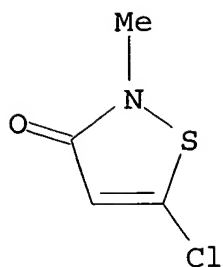
RN 114974-41-3 HCA

CN 3(2H)-Isothiazolone, 5-chloro-2-methyl-, mixt. with 2-bromo-2-nitro-1,3-propanediol and 2-methyl-3(2H)-isothiazolone (9CI) (CA INDEX NAME)

CM 1

CRN 26172-55-4

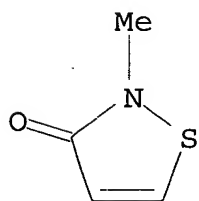
CMF C4 H4 Cl N O S



CM 2

CRN 2682-20-4

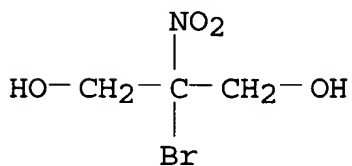
CMF C4 H5 N O S



CM 3

CRN 52-51-7

CMF C3 H6 Br N O4



IC ICM A01N043-80

ICS A01N043-80; A01N025-22; A01N025-32; A01N033-20; A01N037-44

CC 5-2 (Agrochemical Bioregulators)

ST industrial microbicide isothiazolone stability halonitroalc
aminocarboxylate; glycine bromonitropropanediol isothiazolone
industrial bactericide **fungicide**

IT Antibacterial agents

Fungicides(industrial, synergistic; storage-stable nonirritant industrial
microbicides contg. isothiazolones, halonitroalcs., and

aminocarboxylic acids)

IT 114974-41-3

(storage-stable nonirritant industrial microbicides contg. isothiazolones, halonitroalcs., and aminocarboxylic acids)

L34 ANSWER 11 OF 19 HCA COPYRIGHT 2005 ACS on STN

132:190846 Synergistic industrial **antimicrobial**

compositions containing 2-bromo-2-bromomethylglutaronitrile and control of microorganisms with them. Egawa, Hitoshi; Toyonaga, Yoshihiro (Shinto Fine K. K., Japan). Jpn. Kokai Tokkyo Koho JP 2000080002 A2 20000321, 8 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1998-265671 19980902.

AB Microorganisms in white water in paper manufg. or industrial water systems are controlled by addn. of the compns. contg. (A) 2-bromo-2-bromomethylglutaronitrile (I) and (B) 2,2-dibromo-2-nitroethanol (II), 2-bromo-2-nitropropane-1,3-diol, 1,2-bis(bromoacetoxy)ethane, 1,4-bis(bromoacetoxy)-2-butene, 1,2-benzisothiazolin-3-one, and/or 4,5-dichloro-1,2-dithiol-3-one at 10-10,000 ppm. A 3:7 (wt.%) I-II mixt. (at 100 ppm as active ingredients) significantly controlled microorganisms in white water in paper manuf.

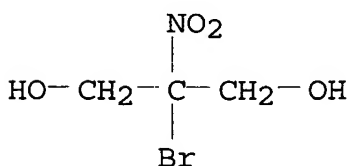
IT 52-51-7D, 2-Bromo-2-nitropropane-1,3-diol, mixts. contg. bromo(bromomethyl)glutaronitrile

(N 25; synergistic industrial **antimicrobials** contg.

bromo(bromomethyl)glutaronitrile for paper manufg. or water systems)

RN 52-51-7 HCA

CN 1,3-Propanediol, 2-bromo-2-nitro- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



IT 168695-31-6

(synergistic industrial **antimicrobials** contg.

bromo(bromomethyl)glutaronitrile for paper manufg. or water systems)

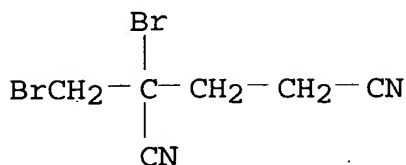
RN 168695-31-6 HCA

CN Pentanedinitrile, 2-bromo-2-(bromomethyl)-, mixt. with 2-bromo-2-nitro-1,3-propanediol (9CI) (CA INDEX NAME)

CM 1

CRN 35691-65-7

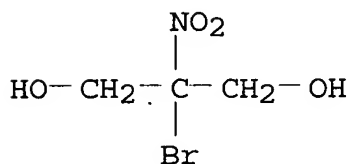
CMF C6 H6 Br2 N2



CM 2

CRN 52-51-7

CMF C3 H6 Br N O4



IC ICM A01N037-34

ICS A01N033-18; A01N037-02; A01N043-26; A01N043-80

CC 5-2 (Agrochemical Bioregulators)

Section cross-reference(s): 43

ST bromomethylglutaronitrile synergistic industrial bactericide
fungicide paper; bromonitroethanol bromomethylglutaronitrile
 synergistic industrial microbicide paper; bromoacetoxyethane
 bromomethylglutaronitrile synergistic industrial microbicide paper;
 bromoacetoxybutene bromomethylglutaronitrile synergistic industrial
 microbicide paper; benzisothiazolinone bromomethylglutaronitrile
 synergistic industrial microbicide paper; chlorodithiolone
 bromomethylglutaronitrile synergistic industrial microbicide paper

IT **Fungicides**

(industrial, synergistic; synergistic industrial
antimicrobials contg. bromo(bromomethyl)glutaronitrile
 for paper manufg. or water systems)

IT Antibacterial agents

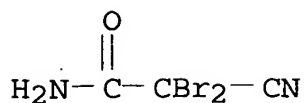
(industrial, synergistic; synergistic industrial
antimicrobials contg. bromo(bromomethyl)glutaronitrile
 for paper manufg. process or water systems)

IT Paper

(synergistic industrial **antimicrobials** contg.
 bromo(bromomethyl)glutaronitrile for paper manufg. or water
 systems)

IT 52-51-7D, 2-Bromo-2-nitropropane-1,3-diol, mixts. contg.
 bromo(bromomethyl)glutaronitrile

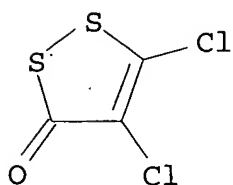
- (N 25; synergistic industrial **antimicrobials** contg.
bromo(bromomethyl)glutaronitrile for paper manufg. or water systems)
- IT 69094-18-4D, 2,2-Dibromo-2-nitroethanol, mixts. contg.
bromo(bromomethyl)glutaronitrile
(N 60; synergistic industrial **antimicrobials** contg.
bromo(bromomethyl)glutaronitrile for paper manufg. or water systems)
- IT 1192-52-5D, 4,5-Dichloro-1,2-dithiol-3-one, mixts. contg.
bromo(bromomethyl)glutaronitrile 2634-33-5D, Proxel Press Paste, mixts. contg. bromo(bromomethyl)glutaronitrile 3785-34-0D, 1,2-Bis(bromoacetoxy)ethane, mixts. contg.
bromo(bromomethyl)glutaronitrile 20679-58-7D, 1,4-Bis(bromoacetoxy)-2-butene, mixts. contg.
bromo(bromomethyl)glutaronitrile 35691-65-7D, Tektamer 38, mixts. contg. 117432-78-7 168695-31-6 247151-38-8 260255-42-3 260255-43-4 260255-44-5
(synergistic industrial **antimicrobials** contg.
bromo(bromomethyl)glutaronitrile for paper manufg. or water systems)
- L34 ANSWER 12 OF 19 HCA COPYRIGHT 2005 ACS on STN
131:154749 Synergistic industrial **antimicrobial compositions** and control of microorganisms with them.
Egawa, Hitoshi (Shinto Fine K. K., Japan). Jpn. Kokai Tokkyo Koho JP 11222404 A2 19990817 Heisei, 8 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1998-38003 19980203.
- AB Microorganisms in white water in paper manuf. or industrial water systems are controlled by adding 1-20,000 ppm compns. contg. halocyanoacetamides N.tplbond.CCXYCONHR1 (X = halo; Y = H, halo; R1 = H, lower alkyl), halogenated aliph. nitroalcs. R2CX(NO2)CH2OH (X = halo; R2 = halo, alkyl, hydroxyalkyl), and 4,5-dichloro-1,2-dithiol-3-one (I). Microorganisms in white water in paper manuf. were controlled by addn. of 50 ppm 8:8:4 (by wt.) mixt. of 2,2-dibromo-3-nitrilopropionamide, 2,2-dibromo-2-nitro-1-ethanol, and I.
- IT 237738-50-0
(synergistic industrial **antimicrobial** compns. contg. halogen compds.)
- RN 237738-50-0 HCA
CN Acetamide, 2,2-dibromo-2-cyano-, mixt. with 2-bromo-2-nitro-1,3-propanediol and 4,5-dichloro-3H-1,2-dithiol-3-one (9CI) (CA INDEX NAME)
- CM 1
- CRN 10222-01-2
CMF C3 H2 Br2 N2 O



CM 2

CRN 1192-52-5

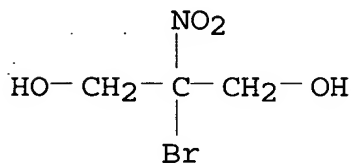
CMF C3 Cl2 O S2



CM 3

CRN 52-51-7

CMF C3 H6 Br N O4



IC ICM A01N037-34

ICS A01N033-20; A01N043-26

CC 5-2 (Agrochemical Bioregulators)

Section cross-reference(s): 43, 44

IT Antibacterial agents

Fungicides(industrial, synergistic; synergistic industrial
antimicrobial compns. contg. halogen compds.)

IT Paper

(synergistic industrial **antimicrobial** compns. contg.
halogen compds. for white water in manuf. of)

IT 9005-25-8, Starch, miscellaneous

(slurry; synergistic industrial **antimicrobial** compns.
contg. halogen compds. for)

IT 1192-52-5D, 4,5-Dichloro-1,2-dithiol-3-one, mixts. contg.

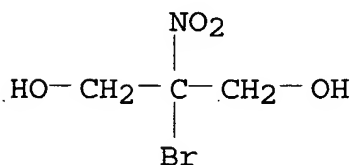
216983-02-7 237738-50-0

(synergistic industrial **antimicrobial** compns. contg.
halogen compds.)

L34 ANSWER 13 OF 19 HCA COPYRIGHT 2005 ACS on STN

130:257177 **Composition**, barrier film, and method for
preventing contact dermatitis comprising a polysaccharide. Dalla
Riva Toma, Joan; Karl, Curtis L. (Hydromer, Inc., USA). U.S. US
5888520 A 19990330, 10 pp., Cont.-in-part of U.S. Ser.
No. 642,227. (English). CODEN: USXXAM. APPLICATION: US
1997-845741 19970425. PRIORITY: US 1996-642227 19960430.AB A compn., and a method for preventing or reducing contact dermatitis
is disclosed. The compn. contains a polysaccharide; a low mol. wt.,
synergistic saccharide; a solvent; and optionally an additive
material. The present invention is further a dermatol.-compatible
barrier film for preventing and reducing contact dermatitis which
contains a polysaccharide; a low mol. wt., synergistic saccharide;
and optionally one or more additives. The compn. is a skin care
product in a form of a lotion, a gel or a cream that is applied to
skin of mammals. Once applied, the solvent in the compn. evaps.,
and thereby leaving behind a dermatol.-compatible barrier film
contg. a polysaccharide; a low mol. wt., synergistic saccharide; and
optionally an additive material. A soln. of hydroxypropyl cellulose
15, Me gluceth-20 5 g in denatured Et alc. 80 g was evaluated as
barrier against several skin irritants. The barrier provided more
than 8 h of protection time for all irritants.IT 52-51-7, 2-Bromo-2-nitropropane-1,3-diol
(compn., barrier film, and method for preventing contact
dermatitis comprising polysaccharide)

RN 52-51-7 HCA

CN 1,3-Propanediol, 2-bromo-2-nitro- (6CI, 7CI, 8CI, 9CI) (CA INDEX
NAME)

IC ICM A61K007-48

INCL 424401000

CC 62-4 (Essential Oils and Cosmetics)

IT Antibacterial agents

Antibiotics

Antimicrobial agents

Antiviral agents

Fungicides

Insect repellents

Irritants

Perfumes

Preservatives

Solvents

Sunscreens

Surfactants

(compn., barrier film, and method for preventing contact dermatitis comprising polysaccharide)

IT 50-99-7, D-Glucose, biological studies 52-51-7,
2-Bromo-2-nitropropane-1,3-diol 55-56-1D, Chlorhexidine, salts
57-48-7, Fructose, biological studies 57-50-1, Sucrose, biological
studies 69-79-4, Maltose 123-03-5, Cetylpyridinium chloride
136-77-6, Hexylresorcinol 141-94-6, Hexetidine 461-72-3,
Hydantoin 461-72-3D, Hydantoin, derivs. 3380-34-5, Triclosan
3458-28-4, Mannose 6363-53-7, Maltose monohydrate 7553-56-2,
Iodine, biological studies 9004-57-3, Ethylcellulose 9004-58-4,
Ethylhydroxyethylcellulose; 9004-62-0, Hydroxyethylcellulose
9004-64-2, Hydroxypropylcellulose 9004-65-3,
Methylhydroxypropylcellulose 9005-25-8D, Starch, derivatized,
hydrolyzate, biological studies 9032-42-2,
Methylhydroxyethylcellulose 9041-56-9, Methylhydroxybutylcellulose
9050-36-6, Maltodextrin 25655-41-8, Povidone-iodine 37208-08-5;
Hydroxybutylcellulose 37318-31-3, Sucrose stearate 51229-78-8
51331-09-0, Hydroxyethylhydroxypropylcellulose 61849-72-7, Methyl
glucoside propoxylate 68936-95-8, Methyl glucose sesquistearate
116057-48-8 221688-44-4

(compn., barrier film, and method for preventing contact dermatitis comprising polysaccharide)

L34 ANSWER 14 OF 19 HCA COPYRIGHT 2005 ACS on STN

127:118602 Synergistic **antimicrobial compositions**

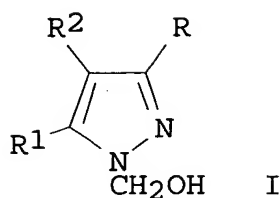
containing 1-hydroxymethylpyrazole and a preservative. King, Vanja M.; Zhou, Xiandong (Buckman Laboratories International, Inc., USA).

PCT Int. Appl. WO 9724031 A1 19970710, 38 pp. DESIGNATED

STATES: W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, UZ, VN, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG. (English). CODEN: PIXXD2. APPLICATION: WO

1996-US20340 19961227. PRIORITY: US 1995-580739 19951229.

GI



AB Compns. comprising I (R, R1 = H or C1-4 alkyl; R2 = H, halo, nitro) or the hydrochloride salt of I; and at least one preservative are disclosed which are synergistically effective in controlling and/or reducing the growth of microorganisms. Applications include wood, paints, leather, adhesives, hides, tanning liquors, paper mill liquors, metalworking fluids, starch, acrylic latex, drug formulations, cooling water, cosmetics, textiles, wastewaters, drilling fluids and agrochem. formulations.

IT 192805-90-6
(synergistic **antimicrobial** compn.)

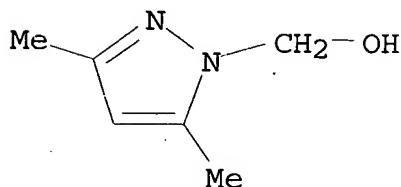
RN 192805-90-6 HCA

CN 1,3-Propanediol, 2-bromo-2-nitro-, mixt. with 3,5-dimethyl-1H-pyrazole-1-methanol (9CI) (CA INDEX NAME)

CM 1

CRN 85264-33-1

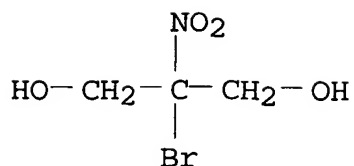
CMF C6 H10 N2 O



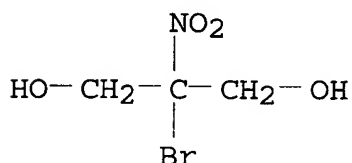
CM 2

CRN 52-51-7

CMF C3 H6 Br N O4



- IT 52-51-7D, 2-Bromo-2-nitropropane-1,3-diol, mixts. with hydroxymethylpyrazole derivs.
(synergistic **antimicrobial** compns.)
- RN 52-51-7 HCA
- CN 1,3-Propanediol, 2-bromo-2-nitro- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



- IC ICM A01N043-56
ICS A01N043-56; A01N047-36; A01N043-90; A01N043-80; A01N043-64; A01N043-50; A01N037-40; A01N035-08; A01N035-02
- CC 5-2 (Agrochemical Bioregulators)
- ST synergism **antimicrobial** hydroxymethylpyrazole preservative
- IT Acrylic polymers, biological studies
(latex; synergistic **antimicrobial** compns. contg. hydroxymethylpyrazole deriv. and preservative)
- IT Tanning (curing)
(liquors; synergistic **antimicrobial** compns. contg. hydroxymethylpyrazole deriv. and preservative)
- IT Lubricating oils
(metalworking; synergistic **antimicrobial** compns. contg. hydroxymethylpyrazole deriv. and preservative)
- IT Paper
(mill liquors; synergistic **antimicrobial** compns. contg. hydroxymethylpyrazole deriv. and preservative)
- IT Preservatives
(mixts. with hydroxymethylpyrazole derivs.; synergistic **antimicrobial** compns.)
- IT Adhesives
Agrochemical formulations
Cooling water
Cosmetics
Drilling fluids
Drug delivery systems

- Hide
Leather
Paints
Textiles
Wastewater
 (synergistic **antimicrobial** compns. contg.
 hydroxymethylpyrazole deriv. and preservative)
- IT Antibacterial agents
 Fungicides
 Wood preservatives
 (synergistic; synergistic **antimicrobial** compns. contg.
 hydroxymethylpyrazole deriv. and preservative)
- IT 20679-58-7D, Bis-1,4-(bromoacetoxy)-2-butene, mixts. with
hydroxymethylpyrazole derivs.
 (Busan 1210; synergistic **antimicrobial** compns.)
- IT 4719-04-4D, Hexahydro-1,3,5-tris(2-hydroxyethyl)-s-triazine, mixts.
with hydroxymethylpyrazole derivs.
 (Busan 1506; synergistic **antimicrobial** compns.)
- IT 192805-53-1 192805-61-1 192805-66-6 192805-71-3 192805-75-7
192805-79-1 192805-83-7 192805-86-0 **192805-90-6**
192805-93-9 192807-04-8
 (synergistic **antimicrobial** compn.)
- IT **52-51-7D**, 2-Bromo-2-nitropropane-1,3-diol, mixts. with
hydroxymethylpyrazole derivs. 94-13-3D, Propylparaben, mixts. with
hydroxymethylpyrazole derivs. 6440-58-0D, Glydant, mixts. with
hydroxymethylpyrazole derivs. 39236-46-9D, Imidazolidinylurea,
mixts. with hydroxymethylpyrazole derivs. 51229-78-8D, Dowicil
200, mixts. with hydroxymethylpyrazole derivs. 55965-84-9D, Kathon
CG, mixts. with hydroxymethylpyrazole derivs. 78491-02-8D,
Diazolidinylurea, mixts. with hydroxymethylpyrazole derivs.
85264-33-1D, 3,5-Dimethyl-1-hydroxymethylpyrazole, mixts. with
preservatives
 (synergistic **antimicrobial** compns.)
- IT 9005-25-8, Starch, biological studies
 (synergistic **antimicrobial** compns. contg.
 hydroxymethylpyrazole deriv. and preservative)
- L34 ANSWER 15 OF 19 HCA COPYRIGHT 2005 ACS on STN
- 124:310258 Synergistic **antimicrobial compositions**.
Guthrie, Walter Graham; Lewis, Catherine Angela; Roper, David
Vincent (Knoll Aktiengesellschaft, Germany). PCT Int. Appl. WO
9603042 A1 **19960208**, 20 pp. DESIGNATED STATES: W: AU,
BG, BR, BY, CA, CN, CZ, FI, HU, JP, KR, KZ, MX, NO, NZ, PL, RU, SG,
SK, UA, US; RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC,
NL, PT, SE. (German). CODEN: PIXXD2. APPLICATION: WO 1995-EP2789
19950715. PRIORITY: GB 1994-15135 19940727.
- AB An **antimicrobial** compn. comprises 2-bromo-2-nitropropane-
1,3-diol and 2-bromo-2-nitropropanol in proportions sufficient to

provide a synergistic anti-microbial effect.

IT 176226-74-7

(synergistic antimicrobial compn.)

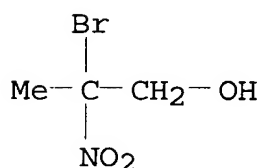
RN 176226-74-7 HCA

CN 1,3-Propanediol, 2-bromo-2-nitro-, mixt. with 2-bromo-2-nitro-1-propanol (9CI) (CA INDEX NAME)

CM 1

CRN 24403-04-1

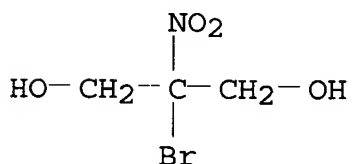
CMF C3 H6 Br N O3



CM 2

CRN 52-51-7

CMF C3 H6 Br N O4



IC ICM A01N035-08

ICI A01N035-08, A01N035-08

CC 5-2 (Agrochemical Bioregulators)

Section cross-reference(s): 63

IT Bactericides, Disinfectants, and Antiseptics

Fungicides and Fungistats

(synergistic, bromonitropropanediol-bromonitropropanol mixt.)

IT 176226-74-7

(synergistic antimicrobial compn.)

L34 ANSWER 16 OF 19 HCA COPYRIGHT 2005 ACS on STN

123:343247 Synergistic antimicrobial compositions

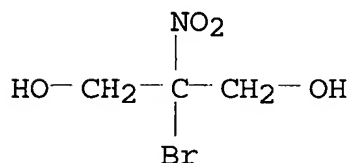
comprising methylene(bisthiocyanate) and 2-bromo-2-nitropropane-1,3-diol, method for inhibiting microbial growth and carpet

backing. Syrinek, Allen R. (Nalco Chemical Co., USA). Can. Pat.

Appl. CA 2127503 AA 19950108, 26 pp. (English). CODEN:

CPXXEB. APPLICATION: CA 1994-2127503 19940706. PRIORITY: US 1993-88050 19930707.

- AB **Antimicrobial** compn. comprises a combination of methylene(bisthiocyanate) (I) and 2-bromo-2-nitropropane-1,3-diol (II) in a ratio 0.001 parts I to 1 part II to 10 parts I to 1 part II. The methods and compns. are very effective in preventing microbial spoilage of latex carpet backing compds. and in paper and pulp prepn., particularly with respect to latex paper coatings.
- IT 52-51-7, 2-Bromo-2-nitropropane-1,3-diol
(synergistic **antimicrobial** compn. for latex carpet backings and latex paper coatings)
- RN 52-51-7 HCA
- CN 1,3-Propanediol, 2-bromo-2-nitro- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



- IC ICM A01N047-048
- ICS C08K005-000; C08L009-000; D21H021-036; C09J011-006
- CC 40-5 (Textiles and Fibers)
Section cross-reference(s): 39, 43
- ST synergistic **antimicrobial** compn methylenebisthiocyanate bromonitropropanediol; latex coating synergistic **antimicrobial** compn; carpet latex backing synergistic **antimicrobial** compn; paper latex coating synergistic **antimicrobial** compn
- IT Paper
(latex coating; synergistic **antimicrobial** compn. for)
- IT Bactericides, Disinfectants, and Antiseptics
Fungicides and Fungistats
(synergistic methylene(bisthiocyanate) and bromonitropropanediol for latex coatings)
- IT Carpets
(backings, latex; synergistic **antimicrobial** compn. for)
- IT Coating materials
(latex, for carpet backing and coated paper; synergistic **antimicrobial** compn. for)
- IT 52-51-7, 2-Bromo-2-nitropropane-1,3-diol 6317-18-6,
Methylene(bisthiocyanate)
(synergistic **antimicrobial** compn. for latex carpet backings and latex paper coatings)

L34 ANSWER 17 OF 19 HCA COPYRIGHT 2005 ACS on STN

123:249181 Synergistic **antimicrobial compositions** comprising 2-bromo-2-(bromomethyl)-glutaronitrile and 2-bromo-2-nitro-propane-1,3-diol.. Syrinek, Allen R. (Nalco Chemical Co., USA). U.S. US 5444088 A **19950822**, 10 pp. (English). CODEN: USXXAM. APPLICATION: US 1993-131883 19931005.

AB This invention relates to methods and compns. for obtaining synergistic **antimicrobial** activity using a combination of 2-bromo-2-(bromomethyl)-glutaronitrile (I) and 2-bromo-2-nitro-propane-1,3-diol(II). The methods and compns. of the invention are very effective in preventing **microbial** spoilage of latex carpet backing compds. and in paper and pulp prepn., particularly with respect to latex paper coatings. Compns. contain. the active ingredients in ratios 0.0015-40.0000 parts I to 1 part II.

IT **168695-31-6**
(synergistic **antimicrobial** compn.)

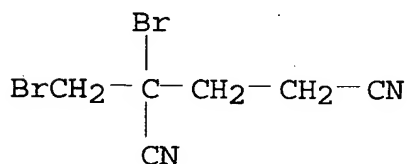
RN 168695-31-6 HCA

CN Pentanedinitrile, 2-bromo-2-(bromomethyl)-, mixt. with 2-bromo-2-nitro-1,3-propanediol (9CI) (CA INDEX NAME)

CM 1

CRN 35691-65-7

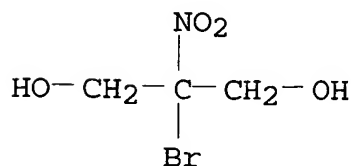
CMF C6 H6 Br2 N2



CM 2

CRN 52-51-7

CMF C3 H6 Br N O4



IC ICM A01N033-18

ICS A01N033-24; A01N037-34

INCL 514526000

CC 5-2 (Agrochemical Bioregulators)
 IT Carpets
 (latex backing; synergistic **antimicrobial** compn. for)
 IT Paper
 (latex coating; synergistic **antimicrobial** compn. for)
 IT Bactericides, Disinfectants, and Antiseptics
 Fungicides and Fungistats
 (synergistic, compns. comprising bromo(bromomethyl)glutaronitrile
 and bromonitropropanediol)
 IT 168695-31-6
 (synergistic **antimicrobial** compn.)

L34 ANSWER 18 OF 19 HCA COPYRIGHT 2005 ACS on STN

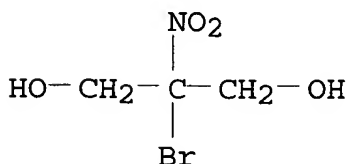
120:226488 **Microbial** inhibiting **compositions** and
 their use. Donofrio, Deborah K.; Whitekettle, Wilson K. (Betz
 Laboratories, Inc., USA). U.S. US 5292776 A 19940308, 7
 pp. (English). CODEN: USXXAM. APPLICATION: US 1993-38583
 19930326.

AB A biocidal compn. and method for inhibiting and controlling the
 growth of the **fungus**, *Trichoderma viride*, are disclosed.
 The compn. comprises an amt., effective for the intended purpose of
 diiodomethyl-p-tolylsulfone and an addnl. biocidal component. The
 method comprises administering between .apprx.0.1 to .apprx.200
 parts of this combined treatment (based on one million parts of the
 desired aq. system) to the particular water contg. system for which
 treatment is desired.

IT 52-51-7, 2-Bromo-2-nitropropane-1,3-diol
 (**microbial** inhibiting compns. contg., for biofouling
 control water purifn.)

RN 52-51-7 HCA

CN 1,3-Propanediol, 2-bromo-2-nitro- (6CI, 7CI, 8CI, 9CI) (CA INDEX
 NAME)



IC ICM A01N033-18

ICS A01N041-10

INCL 514709000

CC 61-8 (Water)

IT **Fungicides** and Fungistats

(diiodomethyl-tolylsulfone contg. compn. as, in cooling water
 systems)

IT 52-51-7, 2-Bromo-2-nitropropane-1,3-diol 20018-09-1,

Diiodomethyl-p-tolylsulfone
(microbial inhibiting compns. contg., for biofouling
control water purifn.)

L34 ANSWER 19 OF 19 HCA COPYRIGHT 2005 ACS on STN

103:118265 **Antimicrobial composition.** Barnes,
Geoffrey (FBC Ltd., UK). Eur. Pat. Appl. EP 142276 A1
19850522, 8 pp. DESIGNATED STATES: R: AT, BE, CH, DE, FR,
GB, IT, LI, LU, NL, SE. (English). CODEN: EPXXDW. APPLICATION: EP
1984-306974 19841012. PRIORITY: GB 1983-28061 19831020.

AB Combinations of prochloraz and bronopol have synergistic
antimicrobial activity. Thus, prochloraz-bronopol mixt. [
98100-77-7] (20 + 20 ppm) controlled the growth of Lenzites
trabea in vitro more effectively than each component alone.

IT 98100-77-7
(antimicrobial activity of, synergistic)

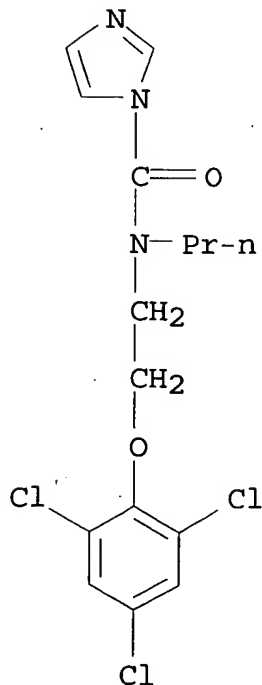
RN 98100-77-7 HCA

CN 1H-Imidazole-1-carboxamide, N-propyl-N-[2-(2,4,6-
trichlorophenoxy)ethyl]-, mixt. with 2-bromo-2-nitro-1,3-propanediol
(9CI) (CA INDEX NAME)

CM 1

CRN 67747-09-5

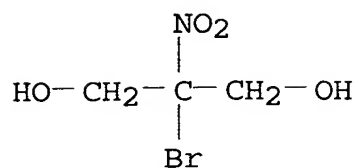
CMF C15 H16 Cl3 N3 O2



CM 2

CRN 52-51-7

CMF C3 H6 Br N O4



IC ICM A01N047-38

ICI A01N047-38, A01N033-20

CC 5-2 (Agrochemical Bioregulators)

ST prochloraz bronopol **antimicrobial** compn

IT Bactericides, Disinfectants, and Antiseptics

Fungicides and Fungistats

(bronopol-prochloraz combination)

IT 98100-77-7

(antimicrobial activity of, synergistic)